BOERNE UNIFIED DEVELOPMENT CODE

4. RESIDENTIAL SITES

September 27, 2019 Version 3.1

MOSAIC

City of Boerne

Table of Contents

4.1. GENERALLY

A. SHORT TITLE

This Chapter shall be known and may be cited as the "Residential Site Design Standards of the Boerne Unified Development Code," or "Residential Site Design Standard." Herein it may be cited as the Chapter.

B. PURPOSE

1. The Residential Site Design Standards

a. Establish the requirements for residential development in the City of Boerne
b. Promote the health, safety and general welfare of the community
c. ensure that future use and development of residential properties are in accordance with the Master Plan of the City

C. TERRITORIAL LIMITS OF REGULATIONS

The territorial application of this ordinance shall include all land located within the corporate limits of the City, as from time to time extended.

D. APPLICABILITY

Upon execution of this Chapter, any private property zoned for residential use within the corporate limits of the City shall be required to comply with this Chapter.

4.2. RESIDENTIAL BUILDINGS

A. RESIDENTIAL FAÇADE DESIGN

1. All elevations visible from public streets shall have exterior detailing, such as recesses, pop-outs, accent materials or corbels.
2. Second story or above shall not exceed the garage front setback.
3. No more than 36 inches of foundation may be exposed on any elevation. For foundations with a required height of more than 36 inches, a masonry drop lug or elevation of earthen landscaping may be used to screen the additional foundation.

B. RESIDENTIAL ROOF DESIGN

1. Residential roofs shall be gambrel, gable or hip roofs.
2. Shed or flat roofs may be used for porches or other wings to the main roof form, provided that shed or flat roofs do not exceed more than 20% of the total roof area of the structure.

C. ENCROACHMENTS INTO REQUIRED YARD SPACE

1. The following may encroach the rear yard setback, provided that there remains a separation of at least 10 feet between encroaching feature and the rear lot line:

   a. Deck
   b. Patio
   c. Awning
   d. Pergola

2. For any floor above the first floor, the following may encroach the front yard setback space, provided the encroaching feature extends no more than 4 feet from the front building line, and does not extend beyond the property boundary:

   a. Balconies
   b. Awnings

4.3. RESIDENTIAL DRIVEWAYS AND PARKING AREAS

A. GENERALLY

1. It shall be a violation of this ordinance to park a passenger vehicle in any front or side yard that is not paved as described above.
2. Any paved area used for parking shall be attached to the driveway as a parking pad. No more than 50% of the required front yard may be covered with a parking pad and or driveway.
3. Single-family detached residences and duplex residences shall have a driveway or paved surface which can accommodate a minimum of 2 parking spaces per dwelling unit, with minimum parking space dimensions of 9 ft x 20 ft. This is in addition to any garage parking.
4. When calculating required parking space for a lot, the minimum required parking area shall not extend into any sidewalk space or street right of way space.
5. Driveways and parking pads shall not count toward the open space requirements for residential lots.
6. Curb cuts shall not exceed 18 feet in width, and lots are limited to no more than two curb cuts. Residential lots with a width at street frontage of less than 84 feet shall have only one curb cut.
7. Paving of the area between the lot line and the road shall be concrete.

B. DRIVING AND PARKING ON UNSURFACED AREAS

1. Driveway and parking areas for a detached or attached dwelling shall be paved, in the area within the lot up to the lot line.
2. Approved paving material includes gravel, crushed stone, concrete, asphalt or another durable and all-weather material acceptable to the City.

C. SINGLE FAMILY NEIGHBORHOOD DESIGN

1. Provide elbow, circular or angled driveways for 25% of the lots, or
2. Provide varying driveway locations and/or orientations to break up patterns and rhythms.

D. COTTAGE RESIDENCES

1. Cottage Residences shall conform to the City's multi-family parking requirements.

E. EXCEPTIONS

1. Single Family Attached Residences

    a. Driveways or paved surfaces of single family attached dwellings shall require a driveway that can accommodate one parking space with dimensions of 9 ft x 20 ft, in addition to any garage parking.

2. Agricultural and Rural Residential properties

    a. Agricultural and Rural Residential properties shall not be required to pave driveways.
    b. Parking of vehicles, equipment or machinery is not allowed on unpaved surfaces within the minimum front yard setback space of the lot, except for temporary activities not lasting more than 24 hours.

3. Large Lot Residential Properties

    a. For Large Lot Residential properties, parking is not allowed on unpaved surfaces on the lot

4. There is no minimum parking space required for residential lots of these zoning categories

    a. Moderate Density Residential
    b. Moderate Density Modular Residential
    c. Attached Residential
    d. Courtyard homes Residential

F. RECREATIONAL AND HEAVY WEIGHT VEHICLE PARKING

1. Recreational and heavy weight vehicle parking requirements are applicable for vehicles exceeding one and one-half ton capacity, including RVs, boats, trucks, truck trailers and vans.
2. Recreational vehicle parking is permitted on residential properties for the following zoning categories, provided the conditions of this section are met:

    a. Agriculture and Rural Residential
    b. Large Lot Residential
    c. Manor Residential
    d. Estate Residential
    e. Low Density Residential

3. For properties that are not classified as one of the above zoning categories, no residential parking space, garage or carport or other automobile storage space or structure shall be used for the parking or storage of any truck, truck trailer, van, recreational vehicle, or boat exceeding one and one-half ton capacity.
4. For properties where recreational and heavy weight vehicle parking is permitted, the recreational vehicle may be parked or stored on the residential premises, provided it is:

    a. Parked on a permanently paved surface when parked in the side yards;
    b. Not parked beside another accessory structure in the required side yards;
    c. Not parked within three feet of the rear or side property lines when parked in the rear of a structure;
    d. Not used for sleeping quarters for more than seven days or nights within any six-month period;
    e. For corner lots, the RV may not be parked within 15 feet of the property line corner formed by the intersecting street; and
    f. Not parked over the front property line or in the right-of-way, except as allowed as Recreational Vehicle Parking on City Streets, as follows.

5. Recreational Vehicle Parking on City Streets

    Parking of recreational vehicles and trailers is permitted on city streets, alleys and public rights-of-way in residential neighborhoods provided the following restrictions:

    a. The recreational vehicle or trailer is parked on city streets, alleys and public rights-of-way for no longer than 24 hours.
    b. There is adequate space for large vehicle parking.
    c. The free flow of traffic is unobstructed.
    d. Parking is not otherwise prohibited.

4.4. RESIDENTIAL FENCES AND WALLS

A. CONFORMITY WITH THE BUILDING REGULATIONS REQUIRED

All fences and walls for all development and property in the City of Boerne shall comply with the building regulations of the City.

B. HEIGHT LIMIT

1. Front Yard

No fence or wall, other than the wall of a permitted structure, shall exceed a height of 4 feet in the front yard space, and no fence or wall shall obscure vision above a height of 3 feet.

2. Side or Rear Yard

No fence or wall, other than the wall of a permitted structure, shall be erected or altered in any side or rear yard to exceed a height of 6 feet unless:

a. a higher fence for screening or security purposes is required by the City;
b. the fence abuts a collector or higher-order street;
c. the ground-floor elevation of the principal dwelling on an abutting lot is at least 4 feet higher than the elevation at the abutting lot line; or
d. the fence is a sound wall or fence required by the State Department of Transportation. In this case the additional fence height may be permitted by the City by receiving a special use permit (SUP).

C. INTERSECTION VISIBILITY

On any corner lot on which a front yard is required by this ordinance, no wall, fence or other structure shall be erected, and no hedge, shrub, tree or other growth shall be maintained within the triangular area formed by the intersecting street lines and a straight line connecting such street lines at points 25 feet from the point of intersection measured along such street lines.

D. MATERIALS

1. The materials used for fences and walls shall consist of:

a. Brick masonry, stone masonry, or other architectural masonry finish;
b. Tubular steel (primed and painted) or wrought iron fence with masonry columns spaced a maximum of 20 feet on center with structural supports spaced every ten feet, and with sufficient evergreen landscaping to create a screening effect;
c. Wooden privacy fence;
d. Living plant screen, upon approval by the City; or
e. Alternate equivalent screening, upon approval by the City

2. A fence shall be constructed of permanent material, such as wood, chain link, stone, rock, concrete block, masonry brick, brick, decorative wrought iron, or other materials that are similar in durability.
3. The following materials shall not be used for fencing:

a. Cast-off, secondhand, or other items not originally intended to be used for constructing or maintaining a fence;

b. Plywood less than 5/8 inches thick, particle board, paper, plastic tarp, or similar material; and
c. Barbed wire, razor wire, and other similar fencing materials capable of inflicting significant physical injury.

E. ARTICULATION

1. No fence, wall or portion thereof that fronts the paved surface of a street shall exceed 100 horizontal feet in length unless columns or pillars of brick, stone or masonry are incorporated as architectural features of the fence.
2. Articulation requirements of this chapter do not apply to a fence or wall constructed of brick, stone, masonry, or iron fencing that consists of at least 50 percent open voids.

4.5. RESIDENTIAL GARAGES AND ACCESSORY STRUCTURES

A. GENERALLY

1. Garages with more than two bays or with garage doors exceeding sixteen (16) feet in width shall separate the stalls with an offset of at least two feet, such that no more than two stalls are in the same vertical plane.
2. Side entry garages which are not on corner lots, but rather on lots with only one street frontage, shall be set back from the side property line by at least twenty-five (25) feet, as measured from the door face of the garage to the side property line.
3. All single-family residences and duplex residences shall include a garage.

B. FRONT FACING GARAGES

1. Front facing garage façades shall not visually or architecturally dominate the front façade elevation of the primary building. The living space shall be the dominant element of the front façade, and the roof accent gabling over the living space shall be visually dominant over that of the garage;
2. Front facing garages must contain at least two of the following:

    a. Single carriage house garage doors with windows;
    b. Garage doors that include windows and are painted to match the main or accent color of the dwelling;
    c. Ornamental light fixtures flanking the doors;
    d. Arbor or trellis;
    e. Columns flanking doors and/or an eyebrow overhand;
    f. Portico;
    g. Dormers;
    h. Twelve-inch overhangs over garage doors;
    i. Eaves with exposed rafters with a minimum six-inch projection from the front plane;
    j. A vertical element such as a tower, placed over the primary pedestrian entrance; or
    k. Roof line changes.

3. Front facing garages protruding up to four feet from the front plane shall have garage doors with windows and shall include a porch or covered landing that extends a minimum of six feet from the plane of the living space.
4. In no case shall a street facing garage protrude more than ten feet from the plane of the living space.
5. In no case shall front facing garage doors comprise more than fifty (50) percent of the primary façade.
6. Front facing garage doors that comprise from forty (40) percent to fifty (50) percent of the primary façade shall be recessed from the primary façade by at least four feet.
7. Front facing garage doors that are flush with the primary façade or that protrude up to four feet from the front façade shall comprise no more than forty (40) percent of the primary façade.
8. Front facing garage doors protruding four to eight feet from the front façade shall comprise no more than thirty (30) percent of the primary façade.

C. SIDE AND REAR FACING GARAGES

a. Side entry garages shall be provided for all corner lots, except for the following zoning categories, which do not require side entry garages:

i. Agriculture and Rural Residential
ii. Large Lot Residential
iii. Manor Residential

4.6. RESIDENTIAL LANDSCAPING

A. CONFORMITY WITH NUISANCE REGULATIONS REQUIRED

Landscaping of all development and property in the City shall comply with The City's nuisance regulations.

B. CONFORMITY WITH TREE PRESERVATION STANDARDS REQUIRED

Landscaping for all development and property in the City shall be in accordance with the City's tree preservation requirements.

C. MEASUREMENTS

1. Diameter, or tree caliper, shall be measured 6 inches above grade level for single trunk trees, and 6 inches above the average grade level for multi-trunk trees.
2. Height shall be measured from the average grade level of the immediate planting area to the top horizontal plane of the shrub or tree at planting.

D. GENERAL TREE PLANTING REQUIREMENTS

1. No tree or shrub shall be planted within four feet of a right-of-way line or curb.
2. No tree or shrub shall be planted within eight feet of a public utility line (water or sewer).
3. A landscape area in which trees are to be provided shall not conflict with a utility easement.
4. No tree that has a mature height of 25 feet or greater shall be planted beneath an existing or proposed overhead utility line.
5. Where canopy trees are required adjacent to or underneath overhead utility lines, ornamental trees (a minimum of two inches in caliper as measured six inches above the ground) shall be provided instead of the required canopy trees.
6. Where landscape plans are required for new development of a lot, the landscape area shall be prepared so as to achieve a soil depth of at least six inches. The six-inch soil depth should consist of 75% soil blended with 25% compost.
7. Four inches of organic mulch material shall cover the planting area.
8. Earthen berms shall have side slopes not to exceed 3:1 (three feet of horizontal distance for each one foot of height). All berms shall contain necessary drainage provisions, as required by the City Engineer.

E. NUMBER OF TREES REQUIRED ON A LOT

1. For lots over 45' at the front setback, front yard landscaping shall consist of at least two 2-inch caliper shade trees, five shrubs and turf or ground cover.
2. For lots 45' or less at the front setback, front yard landscaping shall consist of at least one 2-inch caliper shade tree, five shrubs and turf or ground cover.
3. Xeriscaping is permitted on any lot. The xeriscape area shall consist of one 2-inch caliper ornamental/shade tree and a combination of drought tolerant plants that incorporate dimension into the palette and do not require irrigation. The ground cover shall be rock sized at least ¾-inch, and edging shall be provided of sufficient size to protect against run-off of the ground material.
4. A combination of xeriscaping and typical landscaping is permitted. At a minimum there shall be one 2-inch caliper ornamental/shade tree shall be planted in the front yard space of a lot. Depending on the percentage of xeriscaping in the front yard, the remaining area shall provide typical landscaping as stated above in an amount relative to the percentage of remaining

yard. The ground cover shall be provided of sufficient size to protect against run-off of the ground material.

F. PLANT MATERIALS

1. Neither a property nor a homeowner's association shall restrict or prohibit landscaping materials that promote water conservation.
2. Existing trees on the site of the proposed development may be used to achieve the landscaping requirements of this section.
3. No artificial plant materials shall be used to satisfy the requirements of this section.
4. Plant materials required by this section shall comply with the minimum size requirements of the City at time of installation.
5. Planting areas shall consist of pervious surface areas only. The pervious surface areas for shrubs may be included within pervious surface areas required for trees.
6. Pervious, non-living groundcover may be used in up to 50% of any one particular, enclosed landscaped area.
7. Developers and homebuilders are encouraged to use xeriscape plant materials on model homes to promote the use of water-wise landscaping.

4.7. RESIDENTIAL LIGHTING

A. SECURITY LIGHTING

For the purposes of this section, security lighting is defined as lighting intended to reduce the risk (real or perceived) of personal attack, or lighting intended to discourage intruders, vandals, or burglars, and to protect property. Any light source permitted by this ordinance may be used for security lighting anywhere in the City, provided the following conditions are met:

1. The use of general floodlighting fixtures shall be prohibited.
2. All security lighting fixtures installed after the effective date of this ordinance shall be fully shielded and aimed so that illumination is directed only within the owner's property boundaries and not cast on other areas.
3. Security lighting may illuminate vertical surfaces (e.g. building facades and walls) up to a level eight (8) feet above grade or eight (8) feet above the bottoms of doorways or entries, whichever is greater. The use of up-lighting luminaires for security lighting shall be prohibited.
4. Security lighting fixtures may be mounted on poles located no less than ten (10) feet from the perimeter of the property boundary.
5. Security lights intended to illuminate a perimeter (such as a fence line) shall include motion sensors and be designed to be off unless triggered by an intruder located within five (5) feet of the perimeter. The zone of activation sensors must be within the property boundaries of the property wishing to be illuminated.
6. The use of partially shielded period light fixtures that are mounted on a pole of ten (10) feet in height or less, the illumination shall be directed only within the owner's property boundaries and not cast on other areas, and light bulbs shall not be rated for more than 3000 lumens is permitted.

B. DECORATIVE OUTDOOR LIGHTING

1. Lighting for primarily decorative effect includes architectural illumination, flag and monument lighting, landscape illumination, and seasonal holiday lighting.

2. Lighting of Building Facades and Landscaping

Any light source permitted by this ordinance may be used for lighting of building facades and landscaping, provided the following conditions are met:

a. The maximum illumination on any vertical surface or angular roof surface shall not exceed three (3) foot-candles.
b. Lighting fixtures shall be at least partially shielded, as defined herein, and aimed so that no light is directed onto adjacent streets or roads.
c. The use of up-lighting luminaires shall be prohibited, unless such luminaires are fully shielded, and directed in such a way that no light is aimed beyond the building or landscaping directly into the night sky with the exception the illumination of governmental flags.

3. Ornamental Lights

Ornamental lights may be used in any Lighting District, provided the following conditions are met:

a. Decorative strings of lamps/bulbs must not create glare on adjacent streets or property.

b. Lighting (including strings of lamps/bulbs) for parties, celebrations, and other social gatherings is allowed.

4. Lighting of Walkways, Bikeways, Sidewalks

Any light source permitted by this ordinance may be used for lighting walkways, bikeways and sidewalks in any Lighting District, provided that the lighting fixtures shall be fully shielded, or otherwise designed to direct light downward, and light sources shall have an initial output of no more than 2000 lumens.

C. While fully shielded lights are preferred, individual lamps are limited to 2950 lumens or less.

4.8. RESIDENTIAL SCREENING

A. All mechanical, heating and air conditioning equipment shall be screened from view from the public right-of-way and from adjacent residential property.

4.9. ON-SITE RESIDENTIAL AMENITIES

A. MAXIMUM IMPERVIOUS COVERAGE BY AMENITIES

1. Amenities on a residential lot shall not increase the impervious coverage of the lot by more than 10 % of the total lot area.
2. Amenities contributing to the impervious coverage of a lot include:

    a. Swimming pools and hot tubs
    b. Lined or impervious water features, such as fountains and decorative garden ponds
    c. Patios and concrete slabs other than the foundation of approved primary and accessory buildings
    d. Sports courts, such as basketball and tennis courts

B. SWIMMING POOLS AND HOT TUBS

1. Swimming pools and hot tubs (including all decking and equipment) shall be located behind the predominant front building line of the primary structure, and at least three feet from any property line.
2. Any swimming pool water edge shall be a minimum of five feet from any primary or accessory structure.
3. All pools must be completely enclosed by a fence or wall no less than six feet in height with self-latching and self-closing gates. The latching device shall be located on the pool side a minimum of four and one-half feet from the ground. Automatic electric gates may be used, provided closing action is initiated within 60 seconds after pass-through of a vehicle or persons.
4. Temporary fencing is required during excavation.

BOERNE UNIFIED DEVELOPMENT CODE

5. NONRESIDENTIAL SITES

September 27, 2019 Version 4.1

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5.1. GENERALLY

A. SHORT TITLE

This Chapter shall be known and may be cited as the "Nonresidential Site Design Standards of the Boerne Unified Development Code," or "Nonresidential Site Design Standards." Herein it may be cited as the Chapter.

B. PURPOSE

1. The Nonresidential Site Design Standards

a. establish the requirements for residential development in the City of Boerne
b. promote the health, safety and general welfare of the community
c. ensure that future use and development of residential properties are in accordance with the Master Plan of the City

C. TERRITORIAL LIMITS OF REGULATIONS

The territorial application of this ordinance shall include all land located within the corporate limits of the City, as from time to time extended.

D. APPLICABILITY

Upon execution of this Chapter, any private property zoned for nonresidential within the corporate limits of the City shall be required to comply with this Chapter.

5.2. ACCESS AND ON-SITE CIRCULATION

A. LOCATION OF ACCESS POINTS

1. Every lot shall be provided with permanent vehicular access to a street or an alley upon which it abuts.
2. The location of access points shall be according to street type. Access point minimum distances shall be determined by distance between curb cut of access point and curb cut of closest intersection. Curb cuts shall be a minimum distance from the ultimate curb line of the nearest intersecting street, according to the following street types:

    a. No curb cut along a neighborhood street shall be located nearer than 50 feet to the ultimate curb line of an intersecting street. Curb cuts may be located closer than 50 feet to the ultimate curb line where narrow lot conditions limit available lot street frontage, but no curb cut shall be located nearer than 30 feet.
    b. No curb cut along a collector street shall be located nearer than 100 feet to the ultimate curb line of another curb cut or intersecting street.
    c. No curb cut along a major arterial street shall be located nearer than 200 feet to the ultimate curb line of an intersecting street or another curb cut.

3. Access points shall not conflict with vehicle turning movements.

B. DRIVEWAYS

1. Driveways and access points shall be coordinated with street access standards in the Infrastructure and Land Subdivision Chapter of the Boerne Unified Development Code.
2. Driveways for vehicle access to lots and interior of blocks shall be limited in width as follows within the first 50' of lot depth from the property line:

    a. For primary retail and pedestrian oriented streets

        i. No more than 15% of the lot frontage on lots with frontage on any primary retail or pedestrian-oriented street shall serve as a driveway for vehicle access, with the driveway width not to exceed 45 feet, regardless of the length of lot frontage. The width of a landscaped center median shall not count towards the 45-foot maximum.
        ii. Where shared access easements for two or more lots are combined on a single block face, the width shall not be more than 10% of the entire block face. Individual and shared vehicle access from the lot frontage shall be prohibited on blocks with alley access to the internal of the block.

    b. For secondary or support streets, no more than 25% of the lot frontage on secondary or support streets, up to a maximum of 30' wide on a single lot frontage.
    c. Any lots not capable of adequate vehicle access meeting these standards shall use alley or shared access easements for vehicle access.

C. CURB CUTS

1. Curb cuts shall define the access points for all lots.
2. There shall be a minimum of one curb cut permitted per lot.
3. On non-residential lots where the access point is adjacent to an on-site parking area with two-way vehicular movement patterns, the curb cut shall not exceed 40 feet in width.
4. On all other non-residential lot types, curb cuts shall not exceed 30 feet in width.

5. On arterials and collectors, a distance of at least 200 feet shall be maintained between curb cuts.
6. On neighborhood streets, curb cuts on the same lot shall be separated by at least 36 feet of uncut curb.
7. The ultimate curb line of all curb cuts shall be located at least 6 feet from the nearest property boundary line at street.

D. PARKING AISLES

1. Parking aisles shall be located a minimum of 36 feet from the intersection of the driveway approach and the thoroughfare.

E. DRIVE THROUGH FACILITIES AND STACK SPACE

1. A drive-through lane shall be a separate lane from the circulation routes and aisles necessary for ingress to or egress from the property or access to any off-street parking spaces.
2. All business uses containing an automobile drive-through type ordering or service facility, whether manned or unmanned, shall provide automobile stack space in conjunction with the drive-in facility.
3. Required stack spaces shall not be on any street rights-of-way or alley, any necessary maneuvering area for parking spaces within the general traffic circulation pattern of a parking lot, or in a designated fire lane.
4. Drive through lanes shall accommodate 3 stack spaces, with a total minimum dimension of 9 feet wide by 54 feet long.
5. Stack space may be situated in a straight alignment or in a curved pattern with functional radii, which shall be measured along the centerline from the point of entry or the beginning of a drive-through lane, to the center of the farthest service window area.
6. Drive-through lanes shall be oriented to the ordering and pick-up or service area.
7. All stack space requirements shall be in addition to all parking spaces and loading requirements specified above.

F. LOADING FACILITIES

1. Truck Loading Facilities Required

   a. On-site loading facilities shall be provided for certain uses for receiving and loading merchandise, supplies and materials within a building on the lot or tract.
   b. Where required, off-street loading facilities shall be indicated on required site plans, including location, design, layout and number of spaces provided.
   c. The uses that require off-street loading facilities are:

      i. Retail
      ii. Commercial
      iii. Service
      iv. Industrial

2. Minimum Spaces Required

   The minimum number of truck berths or spaces shall be a function of the gross floor area (GFA) of a structure:

   a. No loading spaces shall be required for a structure with a GFA less than 5,000 square feet.

b. 1 loading space shall be required for a structure with a GFA of 5,000 sf to 15,000 sf.
c. 2 loading spaces shall be required for a structure with a GFA of 15,000 sf to 40,000 sf.
d. 3 loading spaces shall be required for a structure with a GFA of 40,000 sf to 65,000 sf.
e. 4 loading spaces shall be required for a structure with a GFA of 65,000 sf to 100,000 sf.
f. For structures with a GFA greater than 100,000 sf, 1 additional loading space will be required for each additional 80,000 sf of GFA.

3. Dimensional Requirements

On-site loading spaces that satisfy the requirements of this section shall be at least 10 feet in width and at least 45 feet in length.

4. Location

a. All loading operations, parking, storage, and vehicular maneuvering into or out of loading dock spaces shall take place outside of any public street or right-of-way.
b. Service entrances and service yards shall be located only in the rear or side yard. Service yards shall be screened from adjacent residentially zoned or used property by the installation of a buffer yard, conforming to the screening and buffer requirements of this Chapter.
c. Off-street loading facilities may be adjacent to a public alley or private service drive.
d. Off-street loading facilities may consist of a truck berth within the structure.
e. The existence of a 20-foot alley adjacent to the property shall be the equivalent of one berth.
f. Off-street truck loading facilities shall be located on the same lot on which the structure for which they are provided is located, unless a Combined Facility Agreement is approved by the City.
g. No loading dock shall be located or constructed facing a major arterial or collector.
h. No loading dock on the side wall of any building shall be located or constructed within 50 feet of the nearest right of way line of a major arterial or collector.
i. Should orientation of the structure be such that the rear and/or side yard faces a major arterial or collector, off-street loading may be permitted in the rear yard space or side yard space, provided that:

i. there is no other location on the site where the off-street loading criteria may be met;
ii. the loading area is totally (100%) screened from view from the arterial or collector with an 8-foot tall screen that conforms to the screening and buffer requirements of this Chapter, with no openings except for required driveway access.
iii. The loading area is set back at least 50 feet from the nearest right of way line of the arterial or collector.

5. Combined Facility Agreements

a. Requirements for the provision of off-street truck loading facilities with respect to two or more structures may be satisfied by the permanent allocation of the requisite number of spaces for each use in a common truck loading facility.
b. The total number of spaces designated in a common truck loading facility shall be at least the sum of the individual requirements unless the City Manager determines that a lesser number of spaces will be adequate.
c. In determining the number of revised spaces, the City Manager shall consider the respective times of usage of the truck loading facilities by the individual users and the character of the merchandise.

6. Design districts with additional locational requirements for off-street loading

   In keeping with the goals and objectives of the comprehensive plan, viewshed protection shall be a consideration in matters of off-street loading in certain areas of the City. Additional loading requirements are therefore assigned for certain design districts, which correspond to the overlay districts of the Zoning Chapter of the Boerne Unified Development Code.

7. Center City Overlay District

   a. Loading facilities are not required in the District.
   b. Loading facilities shall only be permitted to face alleys. Loading facilities shall not front any public street in the Downtown District.

8. Interstate Corridor Overlay District

   a. No loading dock shall be located or constructed to front a major arterial or collector.
   b. No loading dock on the side wall of any building shall be located or constructed within 100 feet of the nearest right of way line of a major arterial or collector.
   c. Should orientation of the structure be such that the rear and/or side yard faces a major arterial or collector, off-street loading may be permitted in the rear or side yard space, provided that there is no other location on the site where the off-street loading criteria may be met; the loading area is totally (100%) screened from view from the arterial or collector with an 8-foot tall screen that conforms to the screening requirements of this Chapter, with no openings except for required driveway access; and the setback of the loading area is at least 100 feet from the nearest right of way line of the arterial or collector.

9. North Main Overlay District

   a. No loading dock shall be located or constructed facing a major arterial or collector.
   b. No loading dock on the side wall of any building shall be located or constructed within 50 feet of the nearest right of way line of a major arterial or collector.
   c. Should orientation of the structure be such that the rear and/or side yard faces a major arterial or collector, off-street loading may be permitted in the rear or side yard space, provided that there is no other location on the site where the off-street loading criteria may be met; the loading area is totally (100%) screened from view from the arterial or collector with an 8-foot tall screen that conforms to the screening requirements of this Chapter, with no openings except for required driveway access; and the setback of the loading area is at least 50 feet from the nearest right of way line of the arterial or collector.

10. Construction and Maintenance

    a. Off-street truck loading facilities shall be constructed, maintained, and operated in accordance with the specifications of the City's Public Works Department.
    b. All off-street loading areas shall be properly graded for drainage; surfaced with Portland cement concrete, or asphalt, in conformance with City standards; and maintained in good condition free of weeds, dust, trash, and debris.
    c. All off-street loading areas shall be provided with protective screening in conformance with the screening and buffer requirements of this Chapter.
    d. If an existing structure is required to provide off-street loading, any expansion of more than 10% of the total floor area of the structure shall require expansion of the loading area, in conformance with the requirements of this section.

11. Waiver

    The City Manager is authorized to waive the off-street loading requirements for structures that are required to provide and maintain fewer than five off-street parking spaces, or any other structure if the design and the proposed use of the structure shows no need of off-street loading.

5.3. NONRESIDENTIAL BUILDINGS

A. AWNINGS AND CANOPIES, MOVED OVER FROM THE SIGN CHAPTER

1. In single-tenant buildings, one awning or one canopy is allowed per building wall facing a public street or public space.
2. In multi-tenant buildings, one awning or one canopy is allowed per tenant, per building wall facing a public street or public space.

B. NONRESIDENTIAL BUILDINGS

5.4. NONRESIDENTIAL FENCES AND WALLS

A. CONFORMITY WITH THE BUILDING REGULATIONS REQUIRED

All fences and walls for all development and property in the City of Boerne shall comply with the building regulations of the City.

B. HEIGHT LIMIT

1. Front Yard

No fence or wall, other than the wall of a permitted structure, shall exceed a height of 4 feet in the front yard space, except those fences or walls conforming to the screening requirements of this Chapter.

2. Side or Rear Yard

No fence or wall, other than the wall of a permitted structure, shall be erected or altered in any side or rear yard to exceed a height of 6 feet unless:

a. a higher fence for screening or security purposes is required by the City;
b. the ground-floor elevation of a principal dwelling on an abutting lot is at least 4 feet higher than the elevation at the abutting lot line; or
c. the fence or wall is being used to satisfy the screening and buffer requirements of this Chapter; or
d. the fence is a sound wall or fence required by the State Department of Transportation. In this case the additional fence height may be permitted by the City with a special use permit (SUP).

C. INTERSECTION VISIBILITY

On any corner lot on which a front yard is required by this ordinance, no wall, fence or other structure shall be erected, and no hedge, shrub, tree or other growth shall be maintained within the triangular area formed by the intersecting street lines and a straight line connecting such street lines at points 25 feet from the point of intersection measured along such street lines.

D. MATERIALS

1. The materials used for fences and walls shall consist of:

a. Brick masonry, stone masonry, or other architectural masonry finish;
b. Tubular steel (primed and painted) or wrought iron fence with masonry columns spaced a maximum of 20 feet on center with structural supports spaced every ten feet, and with sufficient evergreen landscaping to create a screening effect;
c. Living plant screen, upon approval by the City; or
d. Alternate equivalent screening, upon approval by the City

2. A fence shall be constructed of permanent material, such as stone, rock, concrete block, masonry brick, brick, decorative wrought iron, or other materials that are similar in durability.
3. The following materials shall not be used for fencing:

a. Cast-off, secondhand, or other items not originally intended to be used for constructing or maintaining a fence;

b. Plywood less than 5/8 inches thick, particle board, paper, plastic tarp, or similar material; and
c. Barbed wire, razor wire, and other similar fencing materials capable of inflicting significant physical injury.

E. ARTICULATION

1. No fence, wall or portion thereof that fronts the paved surface of a street shall exceed 100 horizontal feet in length unless columns or pillars of brick, stone or masonry are incorporated as architectural features of the fence.
2. Articulation requirements of this chapter do not apply to a fence or wall constructed of brick, stone, masonry, or iron fencing that consists of at least 50 percent open voids.

5.5. NONRESIDENTIAL LANDSCAPING

A. CONFORMITY WITH NUISANCE REGULATIONS REQUIRED

Landscaping of all development and property in the City shall comply with The City's nuisance regulations.

B. CONFORMITY WITH TREE PRESERVATION STANDARDS REQUIRED

Landscaping for all development and property in the City shall be in accordance with the City's tree preservation requirements.

C. EXEMPTIONS

The landscape regulations do not apply if any of the following hold true.

1. The landscaping standards do not apply if the development consists of construction work on an existing structure that does not increase:

    a. The number of stories in a building on the lot;
    b. The total floor area of all buildings on the lot by more than 20%, or 10,000 square feet, whichever is the less;
    c. The impervious coverage on the lot, exclusive of the area used for parking, by more than 20% or 10,000 square feet, whichever is less.

2. The landscaping standards do not apply to paving or repaving of existing parking areas, or to parking areas that are paved, constructed or expanded no more than 25% of the original area after the date of adoption of this ordinance.
3. The landscape regulations do not apply to temporary structures, such as those associated with construction activities or to on-site structures that do not create or expand building square footage for the property.
4. The landscape regulations do not apply to any area associated with aircraft movement.

D. MEASUREMENTS

1. Diameter, or tree caliper, shall be measured 6 inches above grade level for single trunk trees, and 6 inches above the average grade level for multi-trunk trees.
2. Height shall be measured from the average grade level of the immediate planting area to the top horizontal plane of the shrub or tree at planting.

E. TREES AND PUBLIC INFRASTRUCTURE

1. No tree or shrub shall be planted within four feet of a right-of-way line or curb.
2. No tree or shrub shall be planted within eight feet of a buried public utility line (water or sewer).
3. No tree that has a mature height of 25 feet or greater shall be planted beneath an existing or proposed overhead utility line.
4. Where canopy trees are required adjacent to or underneath overhead utility lines, ornamental trees (a minimum of two inches in caliper as measured six inches above the ground) shall be provided instead of the required canopy trees.

F. PLANTING AREAS

1. Soil depth of new planting areas shall be at least six inches, with a blend of 75% soil and 25% compost.

2. Four inches of organic mulch material shall cover the planting area.
3. Earthen berms shall have side slopes not to exceed 3:1 (three feet of horizontal distance for each one foot of height). All berms shall contain necessary drainage provisions, as required by the City Engineer.
4. All landscape areas shall be protected by a monolithic curb or wheel stops and remain free of trash, litter, and car bumper overhangs.
5. Permeable, non-living groundcover may be used in up to 20% of each individual, enclosed landscaped area.

G. PLANTING SPECIFICATIONS BY PLANT TYPE

1. Medium and Large Trees

   a. Trees shall be planted within an island at least 18 feet
   b. Each single-trunk tree shall have a minimum diameter of 2 inches at time of planting.
   c. Multi-trunk trees shall have a minimum height of 6 feet at time of planting.
   d. Minimum planting area for large and small trees is 100 square feet per specimen. This area may be reduced to 50 square feet per specimen if an irrigation system and internal drainage mechanism are incorporated into the planting area.

2. Small Trees

   a. Each small, single-trunk tree shall have a minimum diameter of 1½ inches at time of planting.
   b. Small, multi-trunk trees shall have a minimum height of 6 feet at time of planting.
   c. Minimum planting area for small trees is 25 square feet per specimen. This may be reduced to 16 feet if an irrigation system and internal drainage mechanism are incorporated into the planting area.

3. Large Shrubs

   a. Large shrubs shall have a minimum container size of 1 gallon at time of planting.
   b. Minimum height of large shrubs at time of planting is 2 feet.
   c. Minimum planting area for large shrubs is 9 square feet per specimen.

4. Small to medium shrubs

   a. Small and medium shrubs shall have a minimum container size of 1 gallon at time of planting.
   b. Minimum height of large shrubs at time of planting is 1 foot.
   c. Minimum planting area for small and medium shrubs is 6 square feet per specimen.

5. Vines and groundcover

   a. Vines and groundcover shall have a minimum container size of 1 gallon at time of planting.

6. Xeriscaping is permitted on any lot. The xeriscape area shall consist of one 2-inch caliper ornamental/shade tree and a combination of drought tolerant plants that incorporate dimension into the palette and do not require irrigation. The ground cover shall be rock, sized at least ¾-inch, and permanent edging material shall be provided of sufficient size to protect against runoff of the ground material.
7. A combination of xeriscaping and typical landscaping is permitted. At a minimum there shall be one 2-inch caliper ornamental/shade tree shall be planted in the front yard space of a lot. Depending on the percentage of xeriscaping in the front yard, the

remaining area shall provide typical landscaping as stated above in an amount relative to the percentage of remaining yard. The ground cover shall be provided of sufficient size to protect against run-off of the ground material.

H. LANDSCAPE MATERIALS

1. Existing trees on the site of the proposed development may be used to achieve the landscaping requirements of this section.
2. No artificial plant materials shall be used to satisfy the requirements of this section.
3. Planting areas shall consist of permeable surface areas only.

I. STREETSCAPE LANDSCAPING

1. The location of landscaping shall conform to the City's street design standards and shall be placed to accommodate traffic and circulation.
2. Where no existing or proposed overhead utility lines exist, street trees shall be large canopy trees from the City's approved tree list.
3. If existing or proposed overhead utility lines exist along the right-of-way that are greater than 35 feet in height, then the trees shall be medium trees.
4. If existing or proposed overhead utility lines exist along the right-of-way that are lower than 35 feet in height, then the trees shall be small trees.
5. Except for I-10 frontage roads, the distance between street trees shall not exceed 100 feet on center.
6. Geometry of street tree planting

    a. In the following overlay districts, street tree planting shall be linear and uniform, with no more than 10 feet of variation on-center, if needed to accommodate driveways, utilities or other required features of a site.

        i. South Boerne Overlay District
        ii. North Main Overlay District
        iii. Downtown Historic District
        iv. Interstate Overlay District

    b. For streetscaping outside of these overlay districts, uniform and linear spacing is not required.

7. Median landscaping

    a. Landscaping improvements shall be installed within the medians of all proposed or planned divided roadways within the city limits, as shown on the City's thoroughfare plan.
    b. Standard landscaping for medians is established as follows:

        i. Trees planted in the median shall be according to the City's approved tree list.
        ii. Trees shall be at least 8 feet in height at time of planting.
        iii. Median trees shall be planted at least 30 feet from median street lights.
        iv. Ornamental trees may be used in median spaces but shall be used as accent trees at the median nose or dispersed among larger canopy trees.
        v. Irrigation installation is to include bubblers or drip irrigation for all trees and irrigation to uniformly water median planting beds.
        vi. Planting beds shall be separated from turf grass using 14-gauge steel edging or decorative concrete curbing to define ground cover beds.

J. SETBACK LANDSCAPING

1. At least 10% of the required front and side yard setback space, which lies between property line and building, shall be landscaped. The landscaping required for parking areas may be used to meet this requirement.
2. The trees shall be planted in the space between the property line and the building. The trees may be planted in groups. A minimum of two trees per 100 linear feet of frontage at property line shall be planted on each lot.

K. CORNER LOT LANDSCAPING

1. Corner lots shall meet the minimum requirements for setback landscaping along both frontages.
2. Non-living, pervious groundcover shall not exceed 20 percent of the total ground coverage in this area.
3. Landscaping in this area shall meet the City's intersection visibility requirements.

L. LANDSCAPING OF PARKING AREAS

1. Parking for Under 100 vehicles

   a. There shall be at least one shade tree planted per 12 required parking spaces. Trees shall be at least 3-in caliper at time of planting.
   b. At least 100 square feet of landscaped area is required per shade tree. Landscaped areas can be islands, peninsulas or medians in the parking area.
   c. If a shade tree of nine inches or larger in circumference or larger already exists in the landscaped area, there shall be no requirement to plant an additional shade tree.
   d. The location, size and shape of landscape islands, peninsulas, and medians shall be at the discretion of the owner within the following guidelines:
   e. the placement of trees in parking lots provide additional cooling and shade
   f. no parking space shall be further than 80 feet from any tree canopy.
   g. The size, shape and location of the landscaping area may be adjusted to accommodate existing trees or other natural features, provided the total area and tree requirements are satisfied.
   h. In parking areas, the islands may be designed with a curbless or perforated curb system to facilitate sheet flow of surface water, provided that infiltration measures for runoff, such as a rain garden or bioswale, are also incorporated into the site design.

2. Parking area for Over 100 vehicles.

   a. A planting median shall be placed, at a minimum, between every third parking bay of adjacent parking bays to prevent traffic movement across parking isles.
   b. The planting median shall be a minimum of 15 feet wide. It may be designed with a curbless or perforated curb system to facilitate sheet flow of surface water, provided that infiltration measures for runoff, such as a rain garden or bioswale, are also incorporated into the site design.
   c. The planting median shall contain the following vegetation, at a minimum:

      i. For commercial properties with a total building footprint of less than 40,000 square feet, 3-inch caliper shade trees shall be planted at a maximum planting interval of 30 feet on center, in a continuous or staggered row.
      ii. For commercial properties with a total building footprint of 40,000 square feet or more, 3-inch caliper shade trees shall be planted at a maximum interval of 40 feet on center, in a continuous or staggered row.
      iii. Ten shrubs for every tree required, planted in rows or clustered groups.
      iv. The planting median shall contain defined breaks, as necessary, to provide pedestrian circulation between bays of parking. The breaks shall allow for

handicap accessibility from one side of the planting median to the other and onto the sidewalk within the planting median, if a sidewalk is located within the median.

d. Existing trees may be counted toward planting requirements in the median. If existing trees are used to satisfy planting requirements in the median, uniform planting in the median shall not be required, as this conflicts with natural patterns of tree growth.
e. In addition to any other required plantings, all parking lot planting areas shall be planted with drought tolerant species normally grown as permanent lawns, such as Bermuda, Zoysia, or Buffalo. Grass areas shall be solid sided.
f. Permeable, non-living materials may be used for up to 20% of the planting median.

M. IRRIGATION

1. No person shall install an irrigation system in the city without first having obtained a permit authorizing such installation. An application for installation of an irrigation system must be accompanied by a full set of plans setting forth the design and operation parameters of the irrigation system to be installed.
2. Irrigation plans shall comply with all State of Texas design and installation requirements including, but not limited to, applicable provisions of V.T.C.A., Administrative Code Title 30, Chapter 344.
3. In addition to the provisions of V.T.C.A. Administrative Code Title 30, Chapter 344, as amended, all new irrigation systems shall meet the following requirements:

a. The irrigation plan shall be sealed by a licensed irrigator or Texas registered landscape architect.
b. The system must include an automatic controller and sensors that prevent the operation of irrigation during rainfall or in freezing weather.
c. All drip irrigation and/or pressure compensating tubing shall be designed and installed according to manufacturer's specifications.
d. Turfgrass areas utilizing irrigation rotors are to be designed and installed using low-angle nozzles.
e. Irrigation heads shall be installed to provide maximum distribution uniformity.
f. The irrigation design shall prevent overspray on impervious surfaces and excessive runoff.
g. New irrigation systems installed in landscaped areas (including turfgrass) that are less than ten feet in width and adjacent to impervious surfaces, or installed in landscape islands with an area of 200 square feet or less shall be designed with drip irrigation and/or pressure compensating tubing (no above-ground spray).

h. When existing irrigation systems are expanded by more than 25 percent (25 percent of the land area covered by the system); or more than 25 percent (25 percent of the land area covered by the system) of the irrigation system is replaced, the portion being expanded or replaced shall meet the requirements of this Code.

N. MAINTENANCE

1. Required plants shall be maintained in a healthy condition at all times.
2. The property owner shall provide weeding, mowing of grass, irrigation, fertilization, prevention of pests, pruning, and other maintenance of all plantings on the property.
3. Any plant that dies shall be replaced with another living plant that is comparable to the existing plant materials or plant materials specified in the approved greenspace plan

within 60 days following notification by the City. The City may extend this time period up to an additional 60 days due to weather considerations.

4. If the plants have not been replaced after appropriate notification and/or extension, the property owner, or his/her designee or lease, shall be in violation of this chapter.
5. Vegetation shall not obstruct the view between the street and the access drives near the entries and exits. The landscaping shall comply with the intersection visibility requirements of the City at all times.

5.6. NONRESIDENTIAL LIGHTING

A. GENERALLY

1. While fully shielded lights are preferred, individual lamps are limited to 2950 lumens or less.

B. CREATION OF LIGHTING DISTRICTS

Lighting districts established in these regulations allow for uniform lighting from one district to the other. The lighting districts are generally defined below.

1. Lighting District 1

Commercial properties contiguous to the IH-10 right-of-way, US 87 (Main Street) from the south exchange to the intersection of HWY 46 (Bandera Rd.) except as identified in District 3, HWY 46 or West Bandera Rd west US 87 (Main Street) to city limits and, from the intersection of US 87 at N. School Street to the north exchange for the depth of the property, or 350 feet whichever is greater.

2. Lighting District 2

Properties contiguous to US 87 North from HWY 46 (Bandera Rd.). The intersection of US 87 and N. School Street and from the intersection of FM 474 and US 87 East to the City limits, and from the intersection of HWY 46 E and US 87 East along River Road to the City limits.

3. Lighting District 3

River Rd from US 87 to the west side of Esser/Herff Road intersection and the remainder of the City of Boerne. Properties located in the SoBo Overlay district east of Hwy 87 shall adhere to District 3 lighting standards and shall have pole heights no taller than 20 feet except for street lights on Herff Road.

C. LIGHTING CLASSIFICATION

1. Class 1 Lighting

Class 1 Lighting shall apply to all outdoor lighting where color rendition is required to preserve the effectiveness of the application. Designation of lighting as Class 1 requires an express finding of the City Manager that color rendition is an essential function of the application.

a. Design Plan.

All luminaires used for Class 1 Lighting facilities which are installed after the effective date of this ordinance shall be fully shielded as defined herein, or be designed or provided with sharp cut-off capability, so as to minimize up-lighting, spill lighting, or glare.

b. Recreational Facilities

Any light source permitted by this ordinance may be used for lighting of outdoor recreational facilities (public or private), including, but not limited to, sports fields or

courts, amphitheaters, and similar applications, provided the following conditions are met:

i. A secondary low-level lighting system that complies with Class 2 Lighting shall be installed to facilitate security, cleanup, maintenance, and exit from the facility. The low-level lighting system shall provide an average horizontal illumination, at grade level, of no more than three (3) foot-candles.
ii. Recreational facilities located in Lighting District 3 shall turn off Class 1 lighting within thirty (30) minutes of the end of an event.

c. Outdoor Sales

Any light source permitted by this ordinance may be used for lighting of outdoor sales located in Lighting District 1, provided the following conditions are met:

i. The primary outdoor lighting of the primary facility shall be turned off at 11:00 p.m. or thirty (30) minutes after closing, whichever is later, but in no event shall the main outdoor lighting be illuminated after 12:00 a.m. unless there is a scheduled "special event"; i.e. an all-night sale.
ii. A secondary low-level lighting system that complies with Class 2 Lighting lamps may be metal Haliad if the property owner desires shall be installed to facilitate security, cleanup, maintenance, and exit from the facility. The low-level lighting system shall provide an average horizontal illumination, at grade level, of no more than six (6) foot candles.
iii. Lighting Levels - During operating hours:

(a) Feature display area (the area within 200 ft. of the main building) the average horizontal illumination level shall not exceed fifty (50) foot-candles. These areas shall not be located within 100 feet of a residentially zoned areas.
(b) Other display areas the average horizontal illumination level shall not exceed (30) foot-candles. These areas shall not be located within 100 feet of a residentially zoned area
(c) General parking areas for staff etc. shall not exceed two and one half (2.5) foot- candles.

iv. Lighting Levels - After Hours:

(a) The primary outdoor lighting of the primary facility shall be turned off at 11:00 p.m. or thirty (30) minutes after closing, whichever is later, but in no event shall the main outdoor lighting be illuminated after 12:00 a.m. unless there is a scheduled "special event" i.e. an all-night sale.
(b) A secondary low-level lighting system that complies with Class 2 Lighting shall be installed to facilitate security, cleanup, maintenance, and exit from the facility if the property owner desires. The lamps may be metal Haliad or LED. The low-level
(c) lighting system shall provide an average horizontal illumination, at grade level, of no more than two and one half (2.5) foot-candles.

2. Class 2 Lighting

Class 2 Lighting shall apply to all outdoor lighting where general illumination for safety and security of grounds is the primary concern and color rendition is not required to preserve the effectiveness of the application. The City Manager and/or the City Manager's designee may consider other lighting options if safety is of consideration.

a. Parking Lots

Parking lot lighting shall be designed to provide the minimum lighting necessary to ensure adequate vision, security and comfort in parking areas, and to not cause glare or direct illumination onto adjacent properties or streets. Any light source permitted by this ordinance may be used for parking lots located in any Lighting District, provided the following conditions are met:

i. All luminaires used for parking lot lighting shall be either yellow high-pressure sodium or LED and shall follow the standards for lighting identified below. Any exceptions to this section of the ordinance due to safety issues may be made by the City Manager and/or the City Manager's designee.
ii. All luminaires shall use Full Cut-Off Fixtures or shall otherwise be fully shielded, as that term is defined herein.
iii. Design levels shall correspond to the appropriate IES (Illuminating Engineering Society) minimum requirements for illumination.
iv. No up-lighting
v. Poles are measured from grade
vi. Light trespass at the property line is 0.00
vii. Design goals should be the lowest levels that meet the requirement of the task
viii. Any lighting under awnings or canopies shall be completely recessed or shielded
ix. Yellow high-pressure sodium luminaires used for parking lot lighting may be installed at a maximum height of thirty (30) feet
x. Perimeter poles that abut a residence or residential district shall be no more than 10 feet in height. They shall be turned off by 9:00 p.m. unless there is a special event.
xi. River Road and River Corridor zoning districts parking lot lights shall be fully shielded, decorative, high pressure sodium lights with bulbs that do not exceed 100 watts, or LED with bulbs that do not exceed 3,000 kelvins. The poles shall not exceed twelve (12) feet in height.
xii. LED parking lot lighting shall adhere to the following criteria.

(a) All fixtures are Full cut-off.
(b) Poles shall be 20 feet in height with perimeter (at the property line) poles at 10 feet in height. iii. Lumens per net acre shall not exceed 100,000 (does not include governmental owned streetlights).

(i) This lumen per net acre value is an upper limit and not a design goal

(ii) Design goals should be the lowest levels that meet the requirement of the task

xiii. Maximum 3,000 kelvins for bulbs.
xiv. Any lighting under awnings or canopies shall be completely recessed or shielded.
xv. Outdoor lighting intended to be left on more than 30 minutes after closing, or the completion of activities must be reduced to 25% or less of the normal lumen output. Motion sensor activation may be allowed to cause the light to resume normal lumen output only when activated and to be reduced back to 25% or less of normal lumen output with 5 minutes after activation.
xvi. Wall packs may be used in combination with pole lights if they are full cut-off and/or shielded fixtures.
xvii. In the South Boerne Overlay District, the area east of Hwy 87 is limited to 50,000 lumens per acre.

b. Street Lighting

Street lighting shall be designed to provide minimum lighting necessary to ensure adequate vision, security and comfort in public and private streets, and to not cause glare or direct illumination more than five (5) feet beyond the right of way. Any light source permitted by this ordinance may be used for street lighting in any Lighting District, provided the following conditions are met:

i. Luminaires used for public/private street lighting that are installed after the effective date
ii. of this ordinance shall be installed using Full Cut-Off Fixtures or shall otherwise be fully shielded, as that term is defined herein. Design levels shall correspond to the appropriate
iii. IES (Illuminating Engineering Society) minimum requirements for illumination. City Council authorizes the use of the Granville series luminaire with the Leaf Style Casting and Lunar Optics as manufactured by Holophane.
iv. Only high pressure sodium lighting fixtures shall be installed after the effective date of this ordinance with the exception of decorative lights which have been approved for street lighting uses by the City Council. The City Manager may approve the use of LED lighting fixtures for street lighting.

c. Security Lighting

For the purposes of this section, security lighting is defined as lighting intended to reduce the risk (real or perceived) of personal attack, or lighting intended to discourage intruders, vandals, or burglars, and to protect property. Any light source permitted by this ordinance may be used for security lighting in any Lighting District, provided the following conditions are met*:*

i. All security lighting fixtures installed after the effective date of this ordinance shall be fully shielded and aimed so that illumination is directed only within the owner's property boundaries and not cast on other areas. The use of general floodlighting fixtures shall be prohibited.
ii. Security lighting may illuminate vertical surfaces (e.g. building facades and walls) up to a level eight (8) feet above grade or eight (8) feet above the bottoms of doorways or entries, whichever is greater. The use of up-lighting luminaires shall be prohibited.
iii. Security lighting fixtures may be mounted on poles located no less than ten (10) feet from the perimeter of the property boundary.
iv. Security lights intended to illuminate a perimeter (such as a fence line) shall include motion sensors and be designed to be off unless triggered by an intruder located within five (5) feet of the perimeter. The zone of activation sensors must be within the property boundaries of the property wishing to be illuminated.
v. The use of partially shielded period light fixtures that are mounted on a pole of ten (10) feet in height or less, the illumination shall be directed only within the owner's property boundaries and not cast on other areas, and light bulbs shall not be rated for more than
vi. 3000 lumens is permitted.
vii. In the River Road and River Corridor zoning districts, security lights shall be fully shielded, decorative, high pressure sodium lights (bulbs not to exceed 100 watts), or LED (with approval of the City Manager), that do not exceed twelve (12) feet in height measured from grade.

d. Lighting of Canopies and Service Islands

Lighting levels on service islands and under canopies shall be adequate to facilitate the activities taking place in such locations.

i. Areas on the apron away from the service islands used for parking or vehicle storage shall be illuminated in accordance with the requirements for parking areas set forth elsewhere in ordinance.
ii. Areas around the service islands and under canopies shall be illuminated so that the minimum horizontal illuminance at grade level is at least 1.0 foot-candles and no more than forty (40) foot candles in District 1 and twenty (20) foot candles in District 2.
iii. Light fixtures mounted on canopies shall be fully shielded or recessed so that the lens cover is recessed or flush with the bottom surface (ceiling) of the canopy.
iv. Lights shall not be mounted on top, or sides (fascias) of the canopy, and the sides (fascias) of the canopy shall not be illuminated.

3. Class 3 Lighting

Class 3 Lighting shall apply to all outdoor lighting for primarily decorative effect where safety and security of grounds is not the primary concern and color rendition is not required to preserve the effectiveness of the application. Class 3 Lighting includes, but is not limited to, architectural illumination, flag and monument lighting, landscape illumination, and seasonal holiday lighting.

a. Lighting of Building Facades and Landscaping

Any light source permitted by this ordinance may be used for lighting of building facades and landscaping in any Lighting District, provided the following conditions are met:

i. The maximum illumination on any vertical surface or angular roof surface shall not exceed three (3) foot-candles.
ii. Lighting fixtures shall be at least partially shielded, as defined herein, and aimed so that no light is directed onto adjacent streets or roads.
iii. The use of up-lighting luminaires shall be prohibited, unless such luminaires are fully shielded, and directed in such a way that no light is aimed beyond the building or landscaping directly into the night sky with the exception the illumination of governmental flags.

b. Ornamental Lights

Ornamental lights may be used in any Lighting District, provided the following conditions are met:

i. Decorative strings of lamps/bulbs must not create glare on adjacent streets or property.
ii. Lighting (including strings of lamps/bulbs) for parties, celebrations, and other social gatherings is allowed.

c. Lighting of Walkways, Bikeways, Sidewalks

Any light source permitted by this ordinance may be used for lighting walkways, bikeways and sidewalks in any Lighting District, provided the following conditions are met:

i. Where special lighting is to be provided for walkways, bikeways, sidewalks or parks, the following requirements shall apply:

(a) The walkway, pathway, sidewalk, or ground area may be illuminated with bollards.
(b) Lighting fixtures shall be fully shielded, or otherwise designed to direct light downward, and light sources shall have an initial output of no more than 2000 lumens.

d. Outdoor Advertising Signs

Any light source permitted by this ordinance may be used for lighting of outdoor advertising signs located in any Lighting District, provided the following conditions are met. In the event of a conflict, the City of Boerne's Sign Ordinance shall control:

i. All legally installed externally illuminated signs shall have top-mounted luminaires which meet the shielding and grandfathering requirements contained herein.
ii. Bottom-mounted luminaires on externally illuminated signs shall be prohibited.
iii. Legally installed internally illuminated signs, to the degree same are permitted by the Boerne Sign Ordinance, shall be constructed of translucent materials, and the source of internal illumination shall not be directly visible through said material. Internally illuminated signs are prohibited in Lighting District 3.

4. Total Outdoor Light Output and Shielding Requirements.

Table 1 gives requirements of the total light output permitted per acre for the different lighting areas for class of lighting, lamp type and lighting area. These requirements shall be met for all lighting installations subject to this section.

a. Total Outdoor Light Output

Total outdoor light output shall not exceed the lumen limits given in Table 1. In the table, Total means the sum of shielded. For determining compliance with this section the total lumens is the sum of the following:

i. One hundred percent of the lumens from outdoor light fixtures installed on grade, on poles, on the top or sides of buildings or other structures.
ii. Outdoor lighting fixtures shall not be counted in determining the total light output when they are full cut-off light fixtures under canopies, building overhangs or roof eaves.

Table 1 Maximum Total Outdoor Light Output Requirements **Lumen Caps: Mean Lumens per Net Acre (2)**			
Lighting Districts (Defined in Subsection 3.02.002)			
	1	2	3
Commercial, Industrial and Multifamily			
All lighting must be FCO	225,000	100,000	50,000

Notes to Table 1:

1. *Lumens resulting from the lighting of recreational facilities i.e. tennis/football/baseball facilities and primary lighting for outdoor sales facilities shall not be included in the determination of the Lumen Cap per acre.*
2. *Mean lumens per acre equals total outdoor light output divided by net acres.*

5. Nonconforming Luminaires and Establishments

   a. All grandfathered luminaires legally in place prior to the effective date of this ordinance shall be considered lawful nonconforming outdoor lighting.
   b. All grandfathered luminaires shall come into compliance as follows:

      i. Any luminaire that replaces a grandfathered luminaire for any reason shall be replaced with a luminaire that complies with this ordinance.
      ii. Any grandfathered luminaire that is moved, remodeled or otherwise structurally altered, shall be in compliance with the requirements established by this ordinance.

6. Exemptions

   a. Emergency lighting utilized during natural or man-made disasters, but only for the duration of the emergency may be exempted.
   b. Nonconforming lighting fixtures located in the Historic District, which are consistent with the character of the Historic District may be exempted with approval of the Historic Landmark Commission. Approved fixtures shall be consistent with the architectural period and design style of the Historic District.
   c. Lighting elements, such as shades with perforated patterns and opaque diffusers, shall be exempted from the fully shielded requirement provided they do not exceed 100 watts.
   d. Ornamental lights that are string lighting.
   e. If a proposed lighting plan or fixture does not meet the requirements of this ordinance, but is of demonstrable community benefit, City Council may approve a permanent exemption. The applicant requesting a permanent exemption under this ordinance shall submit sufficient information so that City Council may adequately consider the proposed community benefit. All requests for permanent exemptions must comply with the zoning variance request procedures contained in the City of Boerne's Zoning Ordinance. Any appeals related to decisions regarding permanent exemptions shall comply with the appeals process as contained in the City of Boerne's Zoning Ordinance.
   f. The provisions of this code do not prevent the replacement of an existing grandfathered luminaire with an alternate fixture, or the use of bottom-mounted luminaires on

externally illuminated signs if it can be shown that the luminaire(s) to be used improve the view of the night sky consistent with the intent of this code. A person may request (and the City Manager may approve) an exemption if the following information is provided:

i. The location of the luminaire to be installed or replaced;
ii. The purpose of the luminaire;
iii. The total wattage of the grandfathered and the replacement luminaire, if applicable;
iv. The type of luminaire to be installed, and if applicable, the type of replacement;
v. If the luminaire is a replacement, through manufacturer's literature or otherwise, the replacement luminaire will reduce light pollution, glare, or Total Outdoor Light Output; or,
vi. When the luminaire is bottom-mounted, through the use of manufacturer's literature or otherwise, its use is superior in reducing light pollution, glare, or Total Outdoor Light Output as compared to a top-mounted luminaire.
vii. Any other information deemed relevant.

7. Prohibitions

a. The installation of any mercury vapor fixture or lamp, krypton, or argon discharge tubes intended for use as an architectural highlight to attract attention is prohibited.
b. The use of laser source light or any similar high-intensity light (such as a strobe light) is prohibited.
c. The operation of searchlights is prohibited.
d. The use of unshielded lights or floodlights that are not installed with a 45-degree downward tilt.
e. Outdoor lighting that interferes with the safe operation of a motor vehicle is prohibited.
f. Up-lighting is prohibited, except as otherwise provided in this ordinance.
g. It shall be unlawful for any outdoor lighting fixture to cause glare, as defined herein and determined by the City Manager or the City Manager's designee, of sufficient intensity as to create an unsafe condition on public or private streets

8. Illumination Measurement

a. Metering equipment

i. Lighting levels of outdoor lighting shall be measured in foot candles with a direct reading portable light meter with a color and cosine corrected sensor with multiple scales.
ii. The meter shall read within an accuracy of plus or minus five (5) percent.
iii. It shall have been tested and calibrated by an independent commercial photometric laboratory or the manufacturer within one (1) year of the date of use as attested by a certificate issued by such laboratory.

b. Horizontal method of measurement

i. The meter sensor shall be mounted not more than six (6) inches above ground level in a horizontal position.
ii. Readings shall be taken only after the cell has been exposed to provide a constant reading.
iii. Measurements shall be made when the meteorological optical range is six (6) miles or further such that measurements will not be adversely affected by atmospheric scatter.

iv. Measurements shall be made after dark with the existing questioned light sources on, then with the same light sources off. The difference between the two (2) readings shall be compared to the foot candle ratings listed Table 1. This procedure eliminates the effects of moonlight and other ambient light.

c. Vertical method of measurement

i. The meter sensor shall be mounted at least five (5) feet above ground in a vertical position, perpendicular to the property line and facing the outdoor lighting in question.

d. Computation of illumination

i. Illumination at a point may be computed in lieu of measurement.
ii. Computation methods shall consist of generally accepted IESNA standards, using certified photometric data furnished by the fixture manufacturer, lamp manufacturer, photometric laboratory, or other reliable authority satisfactory to the City.
iii. Computations shall be based on new, properly seasoned lamps, new and clean fixtures, and at rated voltage and wattage, with ballasts, lenses, shields, diffusers, and other appurtenances in place, with proper regard taken for mounting height, relative elevation, natural and manmade objects.

9. Temporary Lighting for Sports Practices

a. Where temporary lighting is to be provided for sports practices that are not located in City Parks, or schools the following requirements shall apply.

i. The field to be illuminated shall be a minimum of fifty (50) feet from a residential property line or a residential district.
ii.
iii. Luminaires used for sports practices shall be at a maximum height of twenty (20) feet and may be positioned at that height up to the edge of the property on which the practice is being held.
iv. The Luminaires shall be turned off at 9:00 p.m. or thirty (30) minutes after the practice is over, but in no event shall the field be illuminated after 9:30 p.m.

5.7. ON-SITE PARKING FOR NONRESIDENTIAL PROPERTIES

A. PARKING DESIGN AND CIRCULATION

On-street and shared central parking areas shall be the primary parking strategy for commercial areas and mixed-use centers. In meeting the on-site parking requirements, the following design and location standards shall apply:

1. Rear and side yard parking is preferred over parking in yard space fronting a street.
2. All parking in yard space fronting a street shall be setback at least 10 feet from the lot frontage and screened in accordance with the screening requirements of this Chapter.
3. Customer parking areas interior to a block with a contiguous building longer than 150 feet shall have pedestrian access to the buildings through one of the following:

    a. A mid-block pedestrian passage at least 8' wide providing access to the public streetscape. The passage may be covered or uncovered, but shall not be enclosed; or
    b. Secondary rear building entrances.

4. Shared or cooperative parking serving 3 or more lots, or parking areas for an Anchor building in a commercial area, may front secondary or support streets, provided it is set back at least 10 feet and screened around the perimeter.
5. On secondary or support streets that are not the primary retail and pedestrian-oriented streets of a commercial center, on-site parking for single or adjacent lots may be permitted, provided:

    a. A building occupies at least 50% of the Required Front Building Line on the lot.
    b. Parking areas are screened on sides fronting a street, conforming to the screening requirements of this Chapter. An alternative street wall of materials and features matching or complementing the main building is used to screen the parking at the extension of the Front Building Line. Alternatively, the parking may be screened by landscape and Civic Open Space.

B. ON-SITE PARKING REQUIREMENTS

1. APPLICABILITY

    a. No nonresidential building or structure shall be designed, erected, altered, used, or occupied, and no nonresidential use shall be operated, unless the on-site parking requirements are satisfied.
    b. On-site parking requirements do not apply to property located in the River Corridor Overlay District.
    c. Enlarging, expanding or changing the structures or uses of a property after the execution of this Chapter shall require conformity of all new additions, expansions or changes to the onsite parking requirements of this Chapter, as if the expansion, addition or change were a separate tract, structure or use.

2. Responsibility for Provision of Facilities

    The provision for and maintenance of on-site parking facilities herein required shall be the joint and several responsibility of the operator and owner of the land, building, structure or use on which is located the use for which the on-site parking facilities are required.

3. Size and Location

a. Each on-site parking space shall be at least 9 feet by 18 feet in area, exclusive of access or maneuvering area, ramps and other appurtenances.
b. Except as otherwise permitted under a special plan for location or sharing of facilities, on-site parking facilities shall include adequate maneuvering room and shall be located on the lot on which the use for which they are provided is located.
c. No parking space shall be nearer than 10 feet to any adjacent residential lot.
d. Commercial and construction vehicles shall not be parked on the premises or on any street adjacent to a residential property containing 1.5 acres or less.
e. A commercial or construction vehicle may be parked on the premises of or on a street adjacent to a residential property for the limited purposes of loading and unloading the vehicle, or for temporary work that has been contracted by the resident.

4. Construction and Maintenance

On-site parking facilities shall be constructed, maintained and operated in accordance with the following specifications:

a. Drainage and Surfacing

i. All commercial parking areas, vehicle maneuvering areas and driveways shall be paved with concrete, asphaltic concrete, asphalt, brick or interlocking paving blocks, or other durable and all-weather material acceptable to the City.
ii. All facilities shall be properly graded for drainage and maintained in good condition, free of weeds, dust, trash and debris.

b. Wheel Guards

Boundary or perimeter areas shall be provided with wheel guards or bumper guards, so located that no part of a parked vehicle will extend beyond the lot line of the parking area.

c. Screening of Parking Areas

Screening of parking areas shall conform to the screening requirements of this Chapter.

d. Lighting

The lighting of parking areas shall conform to the lighting requirements of this Chapter.

e. Prohibition of Other Uses

Parking areas shall not be used for any business involving the sale, repair, dismantling or servicing of any vehicles, or the sale of any equipment, materials, or supplies.

5. Minimum Parking Requirements

a. Calculating the Number of Spaces Required

i. Where parking spaces result from the computation of requirements, the fractional space will be treated as another full parking space required.
ii. In computing the parking requirements for any building or development, the total parking requirements shall be the sum of the specific parking space requirements for each class of use included in the building for development.

iii. Floor Area of structures devoted to off-street parking of vehicles shall be excluded in the computing of off-street parking requirements.

iv. The City shall determine the parking requirement for uses that do not correspond to the categories listed in the Parking Rates Table. In such instances, the applicant shall provide adequate information by which the proposal can be reviewed, which may include, but not necessarily be limited to, the following:

(a) Type of uses
(b) Number of employees
(c) Building design capacity
(d) Square feet of sales area and service area
(e) Parking spaces proposed on site
(f) Parking spaces provided elsewhere
(g) Hours of operation

v. Where the application identifies accessory or multiple uses within a structure or multiple structures, the minimum standards shall apply to each use or structure.

b. Minimum Parking Spaces by Use

The Parking Rates table indicates the minimum number of parking spaces required for nonresidential uses. The minimum requirements for on-site parking facilities are intended to include all similar uses. Where the classification of use is not determinable from said table, the City Manager shall determine the appropriate classification. Parking requirements shall be the cumulative requirements of the uses within a building and the total may be considered separately for a cumulative total (i.e. Restaurant dining area and an office or kitchen area for staff only) – all would be counted as separate uses to come up with a total number of parking spaces).

TABLE 3-2: PARKING RATES	
USES	MINIMUM PARKING SPACES REQUIRED
Dwelling, except Multi-Family	2 for the first three bedrooms plus 1 for each additional bedroom in each family unit
Multi-Family Dwelling	1.5 for each studio, one or two-bedroom unit; 2 for each unit with 3 or more bedrooms
Retirement Community	1 for each dwelling unit
Church, auditorium, theater, gymnasium, assembly hall, convention hall, stadium, funeral home	1 for each 4 seats w/ outdoor facilities – add 1 for each 800 square feet of outdoor area
Health Clinic/Medical Office	1 for each 200 square feet of gross floor area
Mixed Use	1 for 300 square feet of gross floor area
Hospital	1 for each 1.5 beds
Long Term Care Facility	1 for each 4 beds
Residential Care Facility	1 for each on duty or resident care provider and 1 for each bedroom
Office	1 for each 300 square feet of gross floor area
Library, club or lodge	1 for each 300 square feet of gross floor area
Hotel, motel, travel trailer court	1 for each guest room or travel trailer space, plus 1 for each 2 employees. (Bars and restaurants are counted as additional uses.)
General retailing, business and commercial uses	1 for each 200 square feet of gross floor area
Retailing with outdoor sales yards	2 for each 1,500 square feet of site area
Gas station	2, plus 3 for each service bay
Restaurant	1 for each 100 square feet of gross floor area

Mobile Food Vendor	2 for each vendor
Bar, night club	1 for each 150 square feet of gross floor area
Outdoor recreation and entertainment facilities	1 for each 800 square feet of outdoor recreational area
Manufacturing, processing, wholesaling	1 for each 400 square feet of gross floor area
Warehousing	1 for each 1,000 square feet of gross floor area
Shopping Center	1 for each 175 square feet of gross floor area The total floor area used for restaurants and health clinics (but not including bar/nightclub) which exceeds 25% of the shopping center floor area, shall require additional parking to be provided in accordance with the requirements for restaurants or health clinics.

C. SHARED PARKING

Adjacent land uses, lots, or sites may share parking under the following conditions and standards:

1. All landowners participating in the shared parking shall execute the necessary cross-access easements to facilitate shared parking and record all documents for the easements with the County.
2. A written agreement for the joint use of parking facilities shall be executed by the parties and approved by the City.
3. Parking spaces shall be located no more than 600 feet from the main entrance to the building for which the shared parking credit is applied.
4. Direct pedestrian access, either by way of pedestrian alleys and passages, or by way of public sidewalks in the streetscape, shall be provided between parking areas and any buildings counting the parking area toward their minimum parking requirement.
5. Parking requirements shall be the cumulative requirements for each of the land use categories indicated in the Shared Parking Requirements Table.
6. For shared parking areas, the spaces required for each use or building is a percentage of the minimum parking requirements of the City. The percentage is given in the Shared Parking Requirements Table, and the standard minimum number of spaces is given in the Parking Rates Table.
7. For each use, the time period requiring the highest total number of parking spaces shall be used to determine the amount of parking required for that use.
8. Alternative parking allocations may be approved by the City, based on industry data or other sufficient evidence and analysis of peak parking demands for specific uses.

TABLE 3-1: SHARED PARKING

LAND USE	PERCENTAGE OF REQUIRED PARKING SPACES BY TIME PERIOD				
	WEEKDAY DAY & EVENING		**WEEKEND DAY & EVENING**		**NIGHTTIME**
	6 AM TO 5 PM	5 PM TO 1 AM	6 AM TO 5 PM	5 PM TO 1 AM	1 AM TO 6 AM
EMPLOYMENT	100 %	10 %	5 %	5 %	5 %

Retail or Service	75 %	75 %	100 %	90 %	5 %
Restaurant	50 %	100 %	75 %	100 %	25 %
Entertainment & Recreation	30%	100 %	75 %	100 %	5 %
Church	5 %	25 %	100 %	50 %	5 %
School	100 %	10 %	10 %	10 %	5 %
Dwellings	25 %	90 %	50 %	90 %	100 %
Lodging	50 %	90 %	75 %	100 %	100 %

D. PARKING CREDITS

A credit may be used to meet the on-site parking requirements. under the following conditions:

1. On-street Parking Credit

   On-street parking within 300 feet of any lot line may be credited to the parking requirement at a rate of one credit for every two on-street parking spaces, provided the parking used as a credit is in front of or on the side of, and does not extend beyond the property line of, a non-residential property.

2. Bicycle Parking Credit

   Bicycle parking facilities within 150 feet of the primary building entrance may be credited at a rate of one credit for every four bicycle parking spaces, up to a maximum of 5% percent of the required vehicle parking. The applicant shall provide sufficient justification that the site can be reasonably accessed by bicycles and that land uses on the site can generate bicycle access in order to receive the bicycle parking credit.

3. Walkable Neighborhood Credit

   Where the density and pattern of the development is such that there exists more than 1 dwelling unit for each 200 square feet of leasable non-residential area in the district as a whole, individual uses may apply for a Walkable Neighborhood Credit. If substantial pedestrian connections exist between the site and the adjacent residential neighborhoods, non-residential uses located may propose that the parking requirements. be reduced by up to 25%. The City may approve the credit based on an assessment of the existing mix of uses, the likely parking impact generated by the proposed use, and other physical conditions that contribute to the pedestrian access to the site.

4. Valet Parking Credit

   By utilizing valet parking, the number of required parking spaces may be reduced up to 40%, subject to City review. Valet parking credit may only be applied for businesses in the Center City Overlay District, the River Road Corridor Overlay District, the Cibolo Riverwalk Overlay District, and the Downtown Historic District.

   a. A business utilizing the valet parking credit shall have a valid valet parking permit before a Certificate of Occupancy is issued. Failure to institute valet parking upon the occupancy of the building for which valet parking is provided or cessation of valet

parking after occupancy has commenced without approval of the City Manager shall constitute a violation of this ordinance.

b. Site Plan required: An individual requesting the valet parking credit shall present a site plan of the business that identifies kiosks, fare gates, walkways, customer waiting areas and all other facilities necessary to accommodate valet parking to the City Manager.
c. Attendant parking service shall be available for the days and hours required by the City.
d. If the valet parking service utilizes the public right-of-way, it may be located at the face of the existing curb.

5. Tree Preservation Credit

a. Upon application and verification by the City, an individual shall be entitled to a reduction in the minimum parking requirements of this Chapter to help meet the community's tree preservation goals.
b. The minimum parking requirements may be reduced by one parking space for every tree having a trunk circumference of 37 inches or more that has been preserved or mitigated on a site.
c. Up to 15% of the required spaces may be waived regardless of trees location; however, a waiver in excess of 15% of the required spaces shall require that some of the preserved or mitigated trees be in the interior of the parking areas. No waiver may exceed 30% of the required spaces.

E. MAXIMUM PARKING

1. No use shall provide more than 10% percent, excluding shared parking and parking credits applied, without incorporating two or more of the following mitigation measures:

a. The surface of parking areas exceeding the 10% overage shall be a permeable surface that allows all storm water to be infiltrated below the surface, in conformance with the City's requirements for permeable surfaces.
b. The amount of open space on the site shall be increased above the minimum by the same square footage of parking area exceeding the 10% overage and shall be subject to the design and location requirements of the open space design standards of the Infrastructure and Land Subdivision Design chapter.
c. Landscape material requirements for the site shall be increased by 10% percent above the minimum amount required in the landscaping requirements of this Chapter. The extra landscape space shall be used as a buffer or screen of the parking area.
d. Internal landscape islands for the on-site parking shall be increased by 5% percent above the minimum requirements.

F. ACCESSIBLE PARKING

1. Accessible parking spaces shall be provided according to State of Texas Program for the Elimination of Architectural Barriers and shall conform to the Americans Disability Act (ADA) of 1991, as may be amended, accessibility guidelines (ANSI Standards).
2. In each parking facility, a portion of the total parking shall be specifically designated, located, and reserved for vehicles licensed by the state for use by the physically disabled. These spaces will be provided according to the following schedule:

Total Spaces in Lot	Min. # Accessible Spaces

a.	Up to 25	1
b.	26 to 50	2
c.	51 to 75	3
d.	76 to 100	4
e.	101 to 150	5
f.	151 to 200	6
g.	201 to 300	7
h.	301 to 400	8
i.	401 to 500	9
j.	Over 500	2% of total

3. Location of accessible spaces. Such parking spaces shall be located on an accessible circulation route and as near as is reasonably possible to the primary entries to the building or facility. In separate parking structures, lots or basement garages parking spaces shall be located on the shortest possible circulation route. In addition, the parking spaces shall be located in proximity to the accessible point of ingress including elevators and there shall be an accessible route from the point of egress to the nearest primary entrance into the building or facility.
4. Additional requirements. One in every eight accessible spaces, but not less than one, shall be served by an access aisle eight feet wide minimum and shall be designated "van accessible."

G. BICYCLE PARKING

1. Bicycle parking spaces shall be required for all multi-family and nonresidential uses and structures. One bicycle parking space shall be required for each 20 parking spaces.
2. Bicycle spaces may be provided through spaces or bicycle storage racks. Bicycle spaces shall be at least 2 feet 6 inches in width and 6 feet in length, with a minimum overhead vertical clearance of 7 feet.
3. Bicycle racks and other bicycle storage fixtures for nonresidential uses must be securely and permanently affixed to the ground and allow for the bicycle to be locked and chained. The design of bicycle racks and fixtures shall be included in final site plans approved by the City and shall be separately marked.
4. Where bicycle spaces are required, the spaces may be indoors or outdoors and shall be located within 50 feet of the main building entrance. The spaces shall not be located behind any wall, shrubbery, or other visual obstruction lying between the principal building and the bicycle spaces. If required bicycle spaces are not visible from the street, signs must be posted indicating their location.
5. Areas used for required bicycle parking shall be paved, drained, and well lighted. Internal bicycle storage facilities shall not be counted toward required parking.

5.8. OUTDOOR STORAGE AND DISPLAY

A. GENERALLY

1. All limited outdoor storage and general outdoor storage areas shall be clearly shown on the site plan submitted for the property.
2. Unless specifically authorized elsewhere in the city's ordinances, all outdoor storage and display shall be located outside the public right-of-way.
3. Outdoor storage shall meet the applicable screening requirements of this Chapter.
4. Outdoor storage and display is allowed in certain nonresidential districts in accordance with this section. Any merchandise, material or equipment situated outdoors shall be subject to the requirements of this section. Outdoor storage and display shall be according to the following categories:

    a. Limited Outdoor Storage
    b. Temporary Outdoor Storage and Display
    c. General Outdoor Storage

B. LIMITED OUTDOOR STORAGE

1. Limited outdoor storage is temporary storage of goods in individual packaging and not in storage containers. Organic materials in plastic packaging are considered limited outdoor storage.
2. Limited outdoor storage is allowed for the following zoning categories, provided that all other requirements have been met:

    a. Neighborhood Commercial
    b. Community Commercial
    c. General Commercial
    d. Center City Commercial
    e. Craft Industrial
    f. Storage and Transportation
    g. General Industrial

3. Limited outdoor storage shall be screened from view outside the site in accordance with the screening requirements of this Chapter. Limited outdoor storage in the following zoning categories is exempt from the screening requirements, provided that all other requirements have been met:

    a. Storage and Transportation
    b. General Industrial

4. Except for the Storage and Transportation category and the General Industrial category, limited outdoor storage shall not occur:

    a. In the required front setback;
    b. Between a front setback and the building front; and
    c. Between a side setback along a public right-of-way and any building or structure.

5. Limited outdoor storage shall not be allowed in any on-site parking spaces.

C. TEMPORARY OUTDOOR STORAGE AND DISPLAY

1. Temporary outdoor storage and display includes merchandise that is temporarily displayed in the outdoor space on a nonresidential property.
2. Temporary outdoor storage and display is permitted for the following zoning categories, provided that all other requirements have been met:

    a. Neighborhood Commercial
    b. Community Commercial
    c. General Commercial
    d. Center City Commercial
    e. Craft Industrial
    f. Storage and Transportation
    g. General Industrial

3. Temporary Outdoor Storage and Display shall not encroach upon the sidewalk space or the public right of way.

D. GENERAL OUTDOOR STORAGE

1. General outdoor storage consists of all remaining forms of outdoor storage not classified as limited outdoor storage. General outdoor storage also includes items stored in shipping containers, conexes, and semi-trailers not attached to a truck.
2. Shipping containers, conexes, and semi-trailers not attached to a truck shall not be stacked more than two units high.
3. General outdoor storage shall be allowed in unlimited quantity, provided that the storage area is screened from any public right-of-way by means of an opaque wall at least six (6) feet in height.
4. General outdoor storage is only permitted for these zoning categories:

    a. Storage and Transportation
    b. General Industrial

5. General outdoor storage shall not be allowed in any on-site parking areas.
6. The placement of general outdoor storage shall not conflict with any public utilities, easements or rights-of-way.
7. The location of general outdoor storage shall meet the accessory building requirements for the applicable zoning category.

5.9. SCREENING AND BUFFERS

A. ITEMS REQUIRING SCREENING

Any delivery and service areas, external support equipment, site utility areas, or other similar high-impact elements of site and building design shall be subject to the following:

1. All mechanical, heating and air conditioning equipment shall be screened from view from the public right-of-way and from adjacent residential property.
2. All delivery or service areas and loading docks shall be located on a discrete façade, and internal to the block wherever possible.
3. Any rooftop equipment shall be screened from view of the adjacent public streetscape or other public or common opens spaces by a parapet on flat roofs, or located on a discrete pitch for pitched roofs.
4. Any service areas, loading docks, service equipment, or other site utility area that is visible from adjacent property or public right-of-way shall be screened with a combination of landscape and wall built of a similar material to the main structure of at least 6 feet high.
5. Any service use that involves vehicle service bays on a primary or secondary façade shall be located on only secondary or support streets, shall have the service bay portion of the building screened with a combination of landscape and wall built of a similar material to the main structure at least 6 feet high, and shall not have service bays that occupy more than 40% of a single façade.

~~B.~~ SCREENING AND BUFFERS FOR COMMERCIAL USES

1. Parking areas

    a. A street wall between 3 and 5 feet, using matching the materials and ornamentation of the building is permitted along the building front line and secondary street frontage.
    b. The street wall must provide openings for pedestrian traffic and act as a screen between the right- of-way and any visible parking area.
    c. The materials for fencing should match the materials and ornamentation of the building.
    d. Landscaping in front of the street wall must be incorporated every ten feet (10') using the methods described below.

        i. A three-foot landscaped berm
        ii. A planting of native trees or large evergreen shrubs that shall grow to a minimum height of eight feet as determined by a registered landscape architect, certified nurseryman or master gardener, or as determined by the City Manager or the City Manager's designee
        iii. A combination of the above

2. Screening of Mechanical Equipment

    a. All roof, ground and wall mounted mechanical equipment (e.g. air handling equipment, compressors, duct work, transformers and elevator equipment) from view at ground level of the property line.
    b. Roof-mounted mechanical equipment shall be shielded from view on four sides. Screening shall consist of materials consistent with the primary building materials, and may include metal screening or louvers, which are painted to blend with the primary building.
    c. Screening shall result in the mechanical equipment blending in with the primary building and not appearing separate from the building. The slab shall be sized to

accommodate the proposed container and sufficient area to receive the front axle loaded points of the collection vehicle.

d. Wall or ground-mounted equipment screening shall be constructed of one of the following:

   i. Evergreen planting screens
   ii. Brick, stone, reinforced concrete, or other similar masonry materials
   iii. Redwood, cedar, preservative pressure treated wood, or other similar materials
   iv. A combination of the above

e. All fence posts shall be rust-protected metal, concrete-based masonry or concrete pillars.

3. Screening of Outside Storage

   a. Outside storage shall be located on the side or rear of the primary building and shall be screened from public view.
   b. Outside storage shall be screened with:

      i. A masonry wall or other material that is similar to the primary structure and at least eight feet tall
      ii. A three-foot landscaped berm
      iii. A planting enclosure of large evergreen shrubs planted a maximum of four feet (4') apart
      iv. that shall create a solid screen to a minimum height of eight feet within five (5) years as determined by a registered landscape architect, certified nurseryman or master gardener, or as determined by the City Manager or the City Manager's designee
      v. A combination of the above

4. Screening of Waste Containers

   a. Waste containers shall be discretely located on the side or rear of the building and screened from public view.
   b. Waste containers must be located at least 50 feet (50') away from residentially zoned property lines.
   c. Waste containers shall be located on a minimum six-inch (6") reinforced slab, sloped to drain.
   d. Waste containers shall be screened on four sides, using an enclosure that screens the waste container from view at the property line.
   e. Screening shall be composed of:

      i. Brick, stone, reinforced concrete, or other similar masonry materials that have a similar finish to the primary finish; or
      ii. Redwood, cedar, preservative pressure treated wood, or other similar materials; or
      iii. Large shrubs planted four feet on center and staggered 30 to 36 inches. Shrubs shall be watered with an irrigation system

   f. All fence posts shall be rust-protected metal, concrete based masonry or concrete pillars.
   g. Six-inch (6") concrete filled steel pipes or better shall be located to protect the enclosure from truck operations.

h. Waste container enclosures shall have steel framed gates with spring-loaded hinges or the equivalent and fasteners to keep them closed. When in use, tiebacks should be used to secure the steel framed gates in the open positions.
i. Waste container screening shall be maintained by the owner at all times.
j. Planting Enclosures using large evergreen shrubs shall incorporate plants similar to those used elsewhere on primary site and shall be not less than 15-Gallon in size.

5. Screening of Loading Docks

Any delivery and service areas, loading docks, external support equipment, site utility areas, or other similar high impact elements of site and building design shall be subject to the following:

a. All delivery or service areas and loading docks shall be located on a discrete façade, and internal to the block wherever possible.
b. Any rooftop equipment shall be screened from view of the adjacent public streetscape or other public or common opens spaces by a parapet on flat roofs, or located on a discrete pitch for pitched roofs.
c. Loading areas shall be enclosed on three sides by a wall or other screening device not less than seven feet in height.
d. Loading areas shall not be located closer than 50 feet (50') to any single-family lot, unless wholly located within an enclosed building.
e. Any service areas, loading docks, service equipment, or other site utility area that is visible from adjacent property or public right-of-way shall be screened with a combination of landscape and wall built of a similar material to the main structure at least 6 feet high.
f. Any service use that involves vehicle service bays on a primary or secondary façade shall be located on only secondary or support streets, shall have the service bay portion of the building screened with a combination of landscape and wall built of a similar material to the main structure at least 6 feet high~~,~~ and shall not have service bays that occupy more than 40 percent of a single façade.

BOERNE UNIFIED DEVELOPMENT CODE

6. SUBDIVISION DESIGN

September 27, 2019 Version 3.1

MOSAIC

City of Boerne

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6.1. GENERALLY

A. SHORT TITLE

This Chapter shall be known and may be cited as the " Subdivision Design Standards," or "Subdivision Standards" of the City of Boerne. Herein it may be referred to as the "Chapter."

B. PURPOSE

1. The Subdivision Design Standards

    a. promote health and general welfare;
    b. prevent the overcrowding of land; and
    c. avoid undue concentration of population

C. INTENT

It is the General Intent of this Article to:

1. Emphasize an integrated planning and design approach towards investment in the core community design elements of subdivisions and achieve both immediate and long-range needs that support the growth and character of the community.
2. Place all proposed subdivisions of land in a context that relates to its surrounding areas and to the region.
3. Create development patterns that are coordinated and efficiently accommodate immediate and planned uses, but that are also more resilient to change and pressures from future growth and development.

D. TERRITORIAL LIMITS OF REGULATIONS

The territorial application of this ordinance shall include all land located within the corporate limits of the City and all land lying within the extra-territorial jurisdiction of the City, as from time to time extended, except for lands which were included in the City of Boerne's extra-territorial jurisdiction through petition as provided by Chapter 42, Section .022(b) of the Local Government Code, provided said lands are not within one mile of the boundaries of the City as such boundaries exist at the time of final plat approval.

E. CONFORMITY REQUIRED

1. It shall be unlawful for any, or the agent of any, landowner to lay out, subdivide, plat or replat any land into lots, blocks and streets within the jurisdictional limits of the City without the approval of the Planning and Zoning Commission in accordance with this ordinance.
2. Compliance with the requirements of this Chapter shall be required for any subdivision construction plans which have not been approved by the City prior to the execution of this Chapter.
3. No transfer of land in the nature of a subdivision as defined herein shall be exempt from the provisions of this ordinance even though the instrument or document of transfer may describe land so subdivided by metes and bounds.

F. PLATTING REQUIRED

1. No building, repair, plumbing or electrical permit shall be issued by the City for any structure on a lot in a subdivision until the final plat of the subdivision has been approved and filed for record and the subdivision has been accepted by the City.

2. The City shall not repair, maintain, install or provide any streets or public utility services in any subdivision for which a final plat has not been approved and filed for record, or in which the standards contained herein or referred to herein have not been complied with in full.
3. The City shall not sell any water, gas, electricity or sewage service within a subdivision for which a final plat has not been approved or filed for record.

G. PENALTY

1. Any person violating this Chapter or any portion thereof shall, upon conviction, be guilty of a misdemeanor and shall be fined $1,000.00.
2. Each day that such violation continues or each occurrence shall be considered a separate offense and punished accordingly.

6.2. LOTS

A. LOT SIZE AND ARRANGEMENT

1. Minimum Lot Size – City Limits

All lots in a subdivision within the corporate limits of the City shall meet the minimum standards of the Zoning Chapter for the zoning district applicable to the land being subdivided.

2. Minimum Lot Size – Extraterritorial Jurisdiction (ETJ)

a. Properties that are not provided water and wastewater service by a public utility must follow the Cow Creek Groundwater Conservation District rules.
b. Exceptions – Extraterritorial Jurisdiction

The following are exceptions to the minimum lot standards in the Extraterritorial Jurisdiction:

i. Applications where the land division requires no public improvements and where each proposed parcel has access to existing roads shall have a minimum lot size of 5 acres, provided lots, buildings, and improvements are arranged in a manner that would allow the efficient and coordinated opening of streets should the property be re-subdivided in the futures.
ii. Applications for Rural Cluster Subdivisions shall meet the lot requirements of Article 4, Section 4.02. Rural Cluster Subdivisions, and be supported by a Transportation Network Plan, Civic Open Space System, and Block and Lot standards required by that section.
iii. Applications pursued under a development agreement for municipal services shall have lot requirements according to a development plan. The development plan shall use lot standards for the most similar zoning district from the City's zoning ordinance. Plan Developments shall have Transportation Network Plan, Civic Open Space System standards, and Block and Lot standards required by this Article and which meet the Boerne Master Plan goals for Centers and Residential Neighborhoods.

B. LOT LINES

1. Frontage

All lots shall have a frontage on a public right-of-way. Cottage developments may provide frontage on a shared access/utility easement provided at either the front or rear of the lot line.

2. Side Lot Lines

All side lot lines shall be at right angles to the right-of-way line. On curved rights of-way or streets, side lot lines shall be radial to that line.

3. Rear Lines

Rear lot lines shall be established at a depth sufficient to permit two-tiers of lots on each block. Lots backing to public rights-of-way shall only be permitted if separated by open space meeting the Civic Open Space System standards in Article 3, Section 3.03.

4. Orientation

All lots shall have a general orientation of width to depth between 1:3 and 2:1, with a width that is relatively consistent dimension throughout the lot. "Piano key" and "flag lots" shall not be permitted, unless warranted by an unusual shape of the land or the ownership of property.

5. Building/Setback Lines

All lots shall have the required building lines specified by the zoning district and street network type applicable to the property. For un-zoned parcels outside of corporate limits of the City but within the City's extraterritorial jurisdiction, building setback lines shall meet the minimum requirements which would be applicable in the least intensive zoning district and street network type which would permit the proposed land use if the subdivision were located inside the City's corporate limits, or the building setback lines of a development plan approved in association with a development agreement for municipal services.

C. LOT ACCESS

1. Lot Access

a. Access Width

i. Lot access width shall be limited based upon the lot width at the lot frontages subject to the standards in Table 3-15.

TABLE 3-15: LOT ACCESS WIDTH

Lot Frontage Width	Maximum Access Width
< 50' RESIDENTIAL	9'
50' TO 64' RESIDENTIAL	9'
65 – 120" RESIDENTIAL	18'
> 120' RESIDENTIAL	15% of lot width
NON-RESIDENTIAL	25% of lot width for a single lot, but the cumulative width of access points along a single block face may never be more than 15% of the entire block face.

ii. Maximum width shall be measured along the right-of-way at the lot frontage or at any crossing of pedestrian facilities in the right-of-way and may allow additional apron approach within the right-of-way to the street edge to permit adequate turning movements.

iii. Where maximum access widths limit or prohibit individual lot access points, shared access easements, or rear and mid-block Access Streets or easements shall be used. [*See Residential Design Standards / Lot Access in Article 3, Section 06.007 of the Boerne Zoning Ordinance for related lot access types and design standards within the lots.*]

2. Minimum Separation

a. Lot access points shall be separated from other access points along a single block face and from the street edge of intersections streets by the dimensions in Table 3-16. ("access separation" / "separation from intersecting street").

TABLE 3-16 : MINIMUM ACCESS SEPARATION**		
	ACCESS TYPE	
FUNCTIONAL CLASSIFICATION	RESIDENTIAL*	NON-RESIDENTIAL
MAJOR ARTERIAL	None	None
MINOR ARTERIAL	None	None
PRIMARY COLLECTOR	None, except as provided in Note 3 below	300' / 300'
SECONDARY COLLECTOR	None, except as provided in Note 3 below	200' / 200'
LOCAL	45' / 60'	100' / 100'
NEIGHBORHOOD LOCAL	45' / 60'	75' / 75'
ACCESS	None / 30'	None / 75'

* Minimum separation of residential lot access points may be averaged along a single block face.

** Separation between access points is measured from centerlines; separation from intersecting streets is measured from the center line of the access and the street edge of the intersecting street.

b. Where applicable, driveways shall be aligned directly across from other driveways or street intersections on the opposite side of the street.
c. Where minimum separation distances limit individual lot access points, shared access easements, or rear and mid-block Access Streets or easements shall be used.
d. Where due to pre-existing lot and/or street configurations application of these standards would lead to ineffective and inefficient lot access, or for residential access to primary and secondary collectors to which the City Manager may grant exceptions to the access requirements of Table 3-16 provided:

    i. The street design and transportation network will not be adversely affected by the exception, and the propose access is generally consistent with the Specific Intent of this Section;
    ii. The proposed access is designed to provide the least possible impact on the public streetscape and transportation network; and
    iii. The proposed access has been reviewed recommended by the Public Works Director and Planning and Community Development Director.

3. Pedestrian Crossings

a. Where vehicular lot access crosses pedestrian facilities, including any mid-block Access Streets or easements, the continuation of the pedestrian connection shall be maintained at the same grade and with the same material as other parts of the sidewalk.
b. Where high-speed or frequent vehicle access is expected the Planning and Zoning Commission may allow vehicle lot access at street grade, provided design details for pedestrian crossings at intersections shall be used.

6.3. BLOCKS

All applications shall propose an orderly system of blocks that result from the proposed *Transportation Network Plan* in the Infrastructure Design chapter of the Unified Development Code.

A. BLOCK SIZES

1. The block size standards are specified in Table 3-12, and shall be based upon the development pattern identified in the Boerne Master Plan.

TABLE 3-12: STREET CONNECTIVITY / BLOCK SIZES

CONTEXT / DEVELOPMENT PATTERN*	BLOCK PERIMETER**
DOWNTOWN AND MIXED USE DISTRICTS	1,600 feet maximum perimeter; 500 feet maximum on any one block face; 250 feet minimum on any one block face
HIGHWAY/COMMERCIAL CENTER	2,000 feet maximum; 600 feet maximum on any one block face; 300 feet minimum on any one block face
NEIGHBORHOOD RESIDENTIAL	2,200 feet maximum; 800 feet maximum on any one block face; 250 feet minimum on any one block face
LOW-DENSITY RESIDENTIAL	2,600 feet maximum; 1000 feet maximum on any one block face; 300 feet minimum on any one block face; Except no requirement if subdivided according the Rural Cluster Subdivision Standards in Article 4.
RURAL RESIDENTIAL	No requirement, but see Article 4. for Rural Cluster Subdivision Standards
SPECIAL DISTRICTS	No requirement; block sizes may be based on an overall development plan provided it supports the *Transportation Network Plan* for this property and adjacent properties.

* Per Boerne Master Plan

** Standards are based on the perimeter formed by the centerline of the public rights-of-way forming the block. Blocks on the perimeter of the property being subdivided which are formed by the streets, any stub streets, and the subdivision boundary with property that may be subdivided in the future, shall not exceed 60% of the maximum perimeter in Table 3-12 .

2. Exceptions to or Alternative Compliance permitted in sub-sections C. and D. may be used in place of the Standards in Table 3-12 when establishing a Transportation Network Plan. Use of the exceptions or alternative compliance should result in an overall plan that equally or better meets the General Intent of this Article, and the Specific Intent of each Section in this Article.

B. BLOCK ARRANGEMENT

Blocks shall be numbered consecutively within the subdivision and/or sections of an overall plat and arranged as follows:

1. Blocks may be irregular in shape if necessary serve important urban design goals, transportation planning goals, or address topographic and natural features, provided they still meet the general street network and connectivity standards.
2. Whenever feasible, each lot should face the front of a similar lot across the street. Transitions between distinct lot types and land uses should occur at the rear of lots internal to the block rather than across the frontage and public streetscape.

C. EXCEPTIONS

The following exceptions to the Block Size standards in Table 3-12 may be granted by the Planning and Zoning Commission or Council, after consideration of the recommendations of the Planning Department.

1. Natural Features

Blocks or parcels abutting or containing important natural features or topographical constraints may be larger provided the proposed street layout preserves important natural features in accordance with the Open Space System standards in Article 3, Section 3.03.

2. Rural Parcels

a. A tract divided into rural lots substantially larger than called for under these regulations may be larger but shall be arranged to permit:

i. the opening of future streets in compliance with these regulations; and
ii. a logical pattern of re-subdivision with minimal future disruption to buildings and structures that are proposed to be built under the original subdivision.
iii. The Planning and Zoning Commission or Planning Department may restrict building locations and site elements to permit future re-subdivision in compliance with these regulations and require a sketch plan of re-subdivision demonstrating potential future division in compliance with all regulations to be submitted with the preliminary plat.

3. Oversized Parcels

Where oversized parcels are platted for the Special Districts, internal access streets and drive aisles may be required by operation of applicable zoning and site design standards to mimic the design and connectivity of the public streetscape.

D. ALTERNATIVE COMPLIANCE

1. Parcels proposed for subdivision that are larger than 30 acres may propose an Average Perimeter Block Size as a means of alternative compliance for Block Size standards in Table 3-12.
2. In calculating the average, all parcels and blocks shall be used, including blocks formed by edges along open spaces and connections to the perimeter of the subdivision.

TABLE 3-13: ALTERNATIVE COMPLIANCE / AVERAGE PERIMETER BLOCK SIZE	
DOWNTOWN AND MIXED USE DISTRICT	1,400’
HIGHWAY / COMMERCIAL CENTERS	1,600’
RESIDENTIAL NEIGHBORHOOD	1,800’

LOW-DENSITY RESIDENTIAL	2,200'

E. CUL-DE-SAC AND DISCONNECTED STREET LIMITATIONS

In any case where a disconnected street may be permitted by the standards, exceptions, or alternative compliance of these regulations, they shall be further limited by the following standards and design requirements:

1. Permanent

   a. Residential

      i. In the interior of a subdivision, Local streets ending in cul-de-sacs may be platted where the Planning and Zoning Commission deems appropriate.
      ii. Where the land being subdivided adjoins property not being subdivided, Local streets ending in cul-de-sacs may be platted provided the streets are carried to the boundaries of the subdivision.
      iii. Streets permanently ending in cul-de-sacs may not be longer than 600 feet.
      iv. The closed end of the culde-sac in residential areas where the lots are 65 feet or wider shall provide a paved turnaround at least 80 feet in diameter on a street right-of-way of at least 104 in diameter
      v. In residential areas where lots are less than 65 feet in width the closed end of the cul-de-sac shall provide a paved turnaround at least 100 feet in diameter on a street right-of-way of at least 120 feet in diameter.

   b. Commercial

      i. In the interior of a subdivision, Local streets ending in cul-de-sacs may be platted where the Planning and Zoning Commission deems appropriate.
      ii. Where the land being subdivided adjoins property not being subdivided, Local streets ending in cul-de-sacs may be platted provided the streets are carried to the boundaries of the subdivision.
      iii. Streets permanently ending in cul-de-sacs may not be longer than 600 feet and shall be provided at the closed end with a paved turnaround at least 96 feet in diameter on a street right-of-way of at least 120 feet in diameter.

   c. Temporary

      i. A temporary turn-around must be built at the end of a street more than 400 feet long that will be extended in the future.
      ii. The following note shall be placed on the plat: "cross-hatched area in a temporary easement for turn-around purposed until the street is extended to the (direction) on a recorded plat."

   d. Street designs such as "loop streets" or "closes" with a minimum turning radius of 30 feet are preferred as an alternative to cul-de-sacs.
   e. The Planning and Zoning Commission or Council may require alternative connections for bicycle or pedestrians at the end of disconnected streets to best meet the Specific Intent of this section, such as pathways at the ends of cul-de-sacs.

6.4. SURVEY REQUIREMENTS

A. PLACEMENT OF LOT MARKERS AND STREET MONUMENTS

1. Monuments consisting of at least one-half inch iron pipe or at least one-half inch reinforced steel, 24 inches in length, shall be placed at all corners of the block lines, and at the point of intersection of curves and tangents of the subdivision.
2. Lot markers shall be metal, at least 24 inches in length, placed at each corner of each lot, flush with the average ground elevation, or they may be countersunk, if necessary, to avoid being disturbed.

B. ELEVATION BENCHMARKS

1. At least one benchmark for every 5 acres in a subdivision shall be permanently installed in an approved manner, at the location and the elevation as shown on the plat.
2. Permanent benchmarks shall be five feet long, steel reinforced concrete posts, four inches in diameter, with the top no more than six inches above and no less than two inches below finished grade.

C. LOT MARKERS FOR UTILITY EASEMENTS

1. There shall be markers placed where a lot line crosses a utility easement with the exception of those blanket utility easements placed around all lots.

6.5. PERIMETER STRUCTURES FOR RESIDENTIAL SUBDIVISIONS

A. CONDITIONS REQUIRING A PERIMETER FENCE OR WALL

1. A wall or fence shall be constructed at the perimeter of a residential subdivision or neighborhood where it abuts a Collector or Arterial street, as defined in Chapter 7: Infrastructure Design.
2. A fence constructed of solid masonry or other material approved by the Planning and Zoning Commission shall be a minimum of 6 feet in height.

B. PERIMETER STRUCTURES AND UTILITY EASEMENTS

1. Perimeter structures may be erected within a public utility, drainage or storm sewer easement, provided they do not impede the operation, installation, maintenance, repair, or replacement of public utilities, drainage facilities, and storm sewers within the easement(s).

    a. Such structures include fences, walls, monuments, signs, access controllers and guard houses. at entry access points, entry monuments, and access controllers.
    b. This shall be as determined by the Director of Public Works.

6.6. PUBLIC AND COMMUNITY FACILITIES

A. SPECIFIC INTENT

It is the Specific Intent of this Section to:

1. Anticipate and evaluate the incremental and long-term impact of development on broader public and community facility needs.
2. Identify opportunities to integrate plans for public and community facilities into the planning and design of proposed land divisions.
3. Consider the location of public and community facilities with initial planning considerations for streets, open spaces, blocks, and lots, so that needed facilities are located conveniently in neighborhoods and districts and serve as focal points for the community.
4. Provide the opportunity to negotiate a fair and equitable price for land needed to develop public or community facilities, or alternatively to provide an incentive for land owners to dedicate land for needed facilities where the lack of facilities may otherwise constrain potential future development.
5. Ensure that the most appropriate locations of public and community facilities are identified and considered prior to the premature commitment of these areas to conflicting development patterns.

B. DEDICATION OF PUBLIC SITES

The Planning and Zoning Commission or Council may request the dedication of land to the City or other government entity with jurisdiction over public and community facilities, for parks, playgrounds, open space, public safety facilities, cultural facilities, or school sites wherever parcels proposed for division include locations identified for such facilities in an official master plan for the jurisdiction. The Planning and Zoning Commission or council shall require that such dedication be in conformance with the Master Plan, or any similar official plan for parks, recreation, public safety, community, or education facilities.

C. RESERVATION OF LAND

Where the land area shown on such plan for such public sites is not dedicated and serves an impact beyond that caused by the proposed development, the Planning and Zoning Commission

or Council may require that the land be reserved for a period of one year to permit such land to be acquired by the appropriate public body.

D. CREDITS

Where the land area shown on such plan for such public sites is not dedicated and serves an impact beyond that caused by the proposed development, the Planning and Zoning Commission or Council may require that the land be reserved for a period of one year to permit such land to be acquired by the appropriate public body.

6.7. CONSERVATION SUBDIVISIONS

A. PURPOSE

Conservation subdivisions allow for the aggregation of lots for the purpose of conserving natural areas for ecosystem services, aesthetics and community enjoyment.

B. APPLICABILITY

1. Conservation subdivisions are permitted within the corporate limits of the City and within the extraterritorial jurisdiction (ETJ) of the City.
2. Conservation subdivisions are subject to the same requirements as standards subdivisions, except for the additional requirement for a dedicated conservation area, as established by this Section.

C. CONSERVATION AREA REQUIREMENTS FOR CONSERVATION SUBDIVISIONS

1. At least 40% of the total land area of the plat or development shall be preserved as a conservation area.
2. At least one of the following shall be present within the boundaries of a designated conservation area:

    a. 100-year Floodplain
    b. Stream corridor identified by the City
    c. At least 10% of the area shall be classified as having a steep slope, in accordance with the City's steep slope specifications
    d. Scenic vista from a point of high elevation
    e. Scenic vista of a point of high elevation
    f. Critical native habitat area meeting at least one of the following criteria:

        i. At least 8 different species of native grasses documented in the designated natural area
        ii. Heritage trees
        iii. Presence of an oak mott
        iv. Native habitat supporting native bees, monarch butterflies, migratory birds, or rare, threatened or endangered species for Central Texas

3. The conservation area shall be contiguous, based upon consistent and substantial linkages of natural systems, including links to areas on adjacent sites. While a Cluster Development or Conservation Subdivision may involve more than one preserved area, no single, contiguous conservation area shall be less than 5 acres or 15% of the site, whichever is greater.
4. All lots in a conservation subdivision or a cluster development shall be within 500 feet of a conservation area, as measured by the most direct pedestrian connection.
5. The width of the conservation area shall not be less than 100 feet in any direction, except where connecting to other park land, trail easement, or open space.
6. No more than 6% of the designated conservation area shall be covered with an impervious surface.
7. Active open spaces such as parks, landscaped areas, outdoor recreation areas or other amenities shall not count towards the 40% minimum dedication requirement.
8. Dark skies shall be preserved in conservation areas, and the lighting plan for the development shall demonstrate how impact of any lighting in a conservation area on dark skies will be minimized.

D. DEDICATION, MANAGEMENT AND MAINTENANCE

1. Only land dedicated through easement or another means of establishing perpetuity of the designation shall count toward the 40% minimum dedication requirement.
2. The conservation easement may be privately held or dedicated to the City, subject to consent of the City. For consideration of the conservation area for public dedication:

    a. The City must consent;
    b. The area must be connected to the City's trail network if applicable; and
    c. The area must be consistent with the Boerne Master Plan and the Park Master Plan

BOERNE UNIFIED DEVELOPMENT CODE

7. SUBDIVISION DESIGN

September 27, 2019 Version 3.1

MOSAIC

City of Boerne TEXAS

Table of Contents

7.1. PROVISIONS

A. SHORT TITLE (§1.01)

This Chapter shall be known and may be cited as the "Infrastructure Design Standards," or "Infrastructure Standards" of the City of Boerne. Herein it may be referred to as the "Chapter."

B. PURPOSE

1. The Infrastructure Design Standards

   a. lessen congestion in the streets,
   b. secure safety from fire, panic, and other dangers,
   c. promote health and general welfare
   d. provide adequate light and air,
   e. avoid undue concentration of population, or
   f. facilitate the adequate provision of transportation, water, sewerage, schools, parks, and other public requirements.

C. INTENT

It is the General Intent of this Article to:

1. Emphasize an integrated planning and design approach towards investment in infrastructure to manage future growth while preserving community character.
2. Enable street design solutions appropriate to the context, unique character, and anticipated land uses of each proposed division of land.
3. Integrate natural systems into the design of common or public open spaces to allow open space to serve multiple aesthetic, recreational, and ecological functions.
4. Create development patterns that are coordinated and efficiently accommodate immediate and planned uses, but that are also more resilient to change and pressures from future growth and development.
5. To facilitate the planning and development of public and community facilities in a timely manner in association with future development of the City and its surroundings.

D. TERRITORIAL LIMITS OF REGULATIONS

The territorial application of this ordinance shall include all land located within the corporate limits of the City and all land lying within the extra-territorial jurisdiction of the City, as from time to time extended,

E. APPLICABILITY

1. The requirements of this Chapter shall apply for any and all projects or properties requiring a subdivision plat, a development plat, or a construction permit from the City of Boerne.

F. EXCEPTIONS

1. This Chapter shall not apply to lands which were included in the City of Boerne's extra-territorial jurisdiction through petition as provided by Chapter 42, Section .022(b) of the Local Government Code, provided said lands are not within one mile of the boundaries of the City as such boundaries exist at the time of final plat approval.

G. CONFORMITY REQUIRED

1. No building, repair, plumbing or electrical permit shall be issued by the City for any structure on a lot in a subdivision until the final plat of the subdivision has been approved and filed for record and the subdivision has been accepted by the City.
2. The City shall not repair, maintain, install or provide any streets or public utility services in any subdivision for which a final plat has not been approved and filed for record, or in which the standards contained herein or referred to herein have not been complied with in full.
3. The City shall not sell any water, gas, electricity or sewage service within a subdivision for which a final plat has not been approved or filed for record, or in which the standards contained herein or referred to herein have not been complied with in full.
4. On or after the passage of this ordinance, any person, firm or corporation (subdivider) seeking approval of any plat, plan or replat of any land within the City and its legally established extraterritorial jurisdiction shall be required to comply with the requirements of this ordinance before such approval may be granted.
5. Any subdivision construction plans that have not been approved by the City before the passage of this ordinance shall be required to comply with the requirements of this ordinance.
6. No transfer of land in the nature of a subdivision as defined herein shall be exempt from the provisions of this ordinance even though the instrument or document of transfer may describe land so subdivided by metes and bounds.

H. PENALTY

1. Any person violating this Chapter or any portion thereof shall, upon conviction, be guilty of a misdemeanor and shall be fined $1,000.00.
2. Each day that a violation continues, or each occurrence, shall be considered a separate offense and punished accordingly.

I. SEVERABILITY

If any section, subsection, sentence, clause or phrase of this ordinance is for any reason held to be unconstitutional, void or invalid, the validity of the remaining portions of this ordinance shall not be affected thereby, it being the intent of the Council in adopting this ordinance that no portion hereof, or provision or regulation contained herein shall become inoperative or fail by reason of the unconstitutionality or invalidity of any section, subsection, sentence, clause, phrase or provision of this ordinance.

7.2. TRANSPORTATION NETWORK AND RIGHT OF WAY DESIGN

A. SPECIFIC INTENT

The Specific Intent of this Section is to:

1. Prioritize planning street networks and the design of street types as an important and substantial civic asset that establishes permanent patterns and the character of the public realm of the City.
2. Provide for efficient and safe movement and access along all public ways through a variety of modes of transportation, including automobiles, bicycles, pedestrians, and potentially transit.
3. Complement regional transportation systems with local networks that support multiple and alternative routes for daily trips, do not overly burden any single roadway, and include logical connections to existing, planned, or potential future streets.
4. Plan street networks that allow the design of streets to transition along their length to best support anticipated and adjacent land uses and development patterns.
5. Develop balanced street designs for regional and local routes that accommodate all potential users of the street and rights-of-way, so that the interests of a single mode of transportation do not unnecessarily compromise other modes of transportation.

B. TRANSPORTATION NETWORK PLAN REQUIRED

All applications shall include a Transportation Network Plan. Applications featuring small parcels shall relate any proposed streets and access points to the surrounding existing transportation network according to these standards.

C. TRAFFIC IMPACT ANALYSIS AND MITIGATION MEASURES

(reserved)

D. TRANSPORTATION NETWORK TYPES

The Transportation Network Plan shall demonstrate how the application is consistent with the Boerne Master Plan, the Major Thoroughfare Plan, any specific sub-area transportation plan, and the existing adjacent transportation network. The Transportation Network Plan shall identify one of the following network types to be applied for the development.

1. Grid or Modified Grid Network

    a. Grid Networks are intended to be used for urban centers and areas with higher traffic impact, as they are the most efficient network for distributing vehicle trips. They are also the most navigable network type for pedestrians.
    b. Grid Networks and Modified Grid Networks are permitted anywhere within the corporate limits of the City.
    c. Grid Networks and Modified Grid Networks are permitted in the City's ETJ in nonresidential subdivisions or nonresidential development plats.
    d. A Grid Network shall:

        i. Have interconnected streets;
        ii. Create a defined, generally rectilinear block structure; and
        iii. Design rights-of-way which support a more compact and walkable development pattern

    e. Permitted modifications of the grid network:

i. Radial streets used to create or connect to focal points or important community destinations;
ii. Off-sets, shifts or T-intersections which preserve connectivity but discourage through traffic in neighborhoods;
iii. Modifications required due to existing cultural amenities, heritage structure or government regulation;
iv. Modifications required due to environmental constraints, such as floodplain, steep slope, stream corridor restrictions, or a required conservation area; or
v. Irregularities or interruptions for the preservation of valuable topographic or natural features, provided that such valuable topographic or natural features are highlighted in the overall development design, either through subdivision design, open space dedication or wayfinding and neighborhood design, in order to justify the irregular treatment of the Grid Network.

2. Curvilinear Network

a. Curvilinear Networks are intended to be used in neighborhoods and master planned communities, as they maintain a hierarchy of street types with effective connectivity and traffic distribution, while encouraging a more flexible arrangement of local streets.
b. Curvilinear Networks are permitted in all neighborhoods and residential subdivisions within the corporate limits of the City
c. Curvilinear Networks are permitted in all residential subdivisions and master planned communities in the City's ETJ.
d. A Curvilinear Network shall have:

i. Arterials which follow a rectilinear grid pattern;
ii. Collectors following a curvilinear pattern and looser block structure; and
iii. Irregularly spaced and non-linear local streets.

3. Organic Network

a. Organic Networks are intended to be used in rural areas and to minimize impact of development on natural features.
b. In the corporate limits of the City, Organic Networks are permitted in areas zoned Agricultural and Rural Residential or in Cluster Developments
c. In the corporate limits of the City, Organic Networks are permitted in Cluster Developments or Conservation Subdivisions
d. In the City's ETJ, Organic Networks are permitted in

i. conservation subdivisions; or
ii. master planned communities where:

(a) there are at least two access points from an arterial; and
(b) low impact development methods are incorporated into the design and construction of the development
(c) traffic calming measures are incorporated into the design and construction of the streets of the development

4. Special District Network

a. Special District Networks are intended for use within the corporate limits or ETJ of the City in mixed-use developments, campuses, office parks, industrial areas or master planned commercial areas.

b. Special District Networks must have at least two points of access from major thoroughfares, or from arterials which demonstrate both the capacity and suitability to accommodate the traffic generated by the Special District Network.

E. DESIGNATING STREETS USING DESIGN TYPES AND FUNCTIONAL CLASSIFICATION

1. Designating streets in the Transportation Network Plan

a. The Transportation Network of the City shall employ a "transitional" approach to street design utilizing both street design type and functional classification.
b. A Transportation Network Plan shall therefore designate all existing and planned streets by both a Functional Classification and a Street Design Type.

i. Street Design Type shall be based on right of way configuration and may vary at different segments of the same street to best support the existing or planned land uses fronting on that segment.
ii. Functional Classification refers to the general function of the street in the overall transportation system of the City, and shall be based on the consistent role of the street with respect to continuity and capacity.

2. Functional Classification of City Streets

The Functional Classification of City Streets shall be in accordance with the Master Thoroughfare Plan of the City.

a. Regional Thoroughfares:

i. provide access to and from the City, and are designed for high volumes of traffic moving over long distances
ii. designed for traffic volumes > 54,000 vehicles per day
iii. shall only be located by the City or by TxDOT, based on the City's Thoroughfare Plan

b. Arterials:

i. provide direct connections to different areas within the City and surrounding areas
ii. are further classified as major arterials and minor arterials, based on traffic volumes, where:

(a) major arterials accommodate between 20,000 and 54,000 vehicles per day; and
(b) minor arterials accommodate between 10,000 and 20,000 vehicles per day

iii. shall be located every ½ to 1 mile of separation, except in rural areas, as may be specified in the City's Thoroughfare Plan
iv. shall have the same meaning and be interpreted as a "Major Thoroughfare" on the City's Thoroughfare Plan existing at the time of adoption of these regulations, until that plan is updated to use the Functional Classifications and the Design Types established by this Chapter.

c. Collectors:

i. Provide direct access between adjacent neighborhoods or districts

ii. Are further classified as primary collectors or secondary collectors, based on traffic volumes, where:

(a) Primary collectors accommodate between 3,000 and 10,000 vehicles per day; and
(b) Secondary Collectors accommodate between 500 and 3,000 vehicles per day

iii. Shall be located every ¼ to ½ mile of separation, except in rural areas, as may be specified in the City's Thoroughfare Plan

d. Local Streets:

i. Provide connections within neighborhoods and districts and are not designed for through traffic
ii. Accommodate between 1,000 and 2,000 vehicles per day

e. Access Streets:

i. are also called alleys
ii. provide little continuity and are designed solely for access to lots or the interior of blocks.
iii. do not permit through traffic
iv. are further classified as residential access streets or nonresidential access streets, where:

(a) residential access streets accommodate less than 250 vehicles per day; and
(b) nonresidential access streets accommodate less than 1,000 vehicles per day

3. Street Design Type

a. Application of Street Design Types

i. Street Design Type refers to the specific design characteristics of the street or "cross section" at any one point.
ii. Many different Street Design Types may be applied over the course of a street with a single Functional Classification to allow streets to transition and best support adjacent or planned land uses and development patterns.
iii. The Street Design Types vary to address the array of elements that make streets complete:

(a) the finished street width and allocation of this width to travel lanes, parking, or alternative modes of travel;
(b) the landscape area and the pedestrian area;
(c) the necessity for clear utility zones in association with the street network, and block and lot layout;
(d) the ability for fire apparatus to access sites; and
(e) the building orientation on adjacent sites.

iv. Proper arrangement of these elements is necessary to balance and best meet the needs of all users of the right-of-way while supporting immediately adjacent property.

b. Rural Streets

i. Characteristics

(a) Medium or low capacity roadway
(b) Designed for moderate speeds
(c) Rough, informal natural vegetation
(d) Appropriate for rural areas
(e) Unfinished or flat curb
(f) Narrow lanes
(g) No paved sidewalk space (although trails could intersect and join these streets on occasion)

ii. Applicability

(a) Rural residential areas
(b) Large lot residential developments
(c) Cluster developments
(d) Conservation subdivisions

c. Neighborhood Streets

i. Characteristics

(a) Medium or low capacity roadway
(b) Moderate or slow speeds
(c) Pedestrian and landscape amenities in the public right of way
(d) Appropriate within residential areas
(e) Narrow to medium lanes
(f) Occasional on-street parking permitted
(g) Right of way landscaping (sometimes referred to as a parkway) is used to buffer pedestrian spaces
(h) Street trees or formal landscaping encouraged
(i) Sidewalks that are at least 5 feet wide on both sides of the street

ii. Applicability

(a) Any street supporting residential uses
(b) High volume streets that go through a neighborhood, provided a parkway element is added to the cross section

d. Avenues

i. Characteristics

(a) High or medium capacity roadway
(b) Designed for slow speeds and high pedestrian amenities
(c) Narrow to medium lane widths
(d) Slow traffic speeds
(e) on-street parking
(f) formal, ornamental landscaping and expanded pedestrian amenity area
(g) wide sidewalks on both sides of the street

ii. Applicability

(a) Any mixed-use development, commercial center or Grid or Modified Grid Network

e. Standard Streets

i. Characteristics

(a) Designed for moderate or high speeds
(b) Can be high, medium or low capacity
(c) Primary function is accommodating vehicle flow
(d) Landscape and pedestrian amenities are accommodated where available but are secondary in priority to accommodation of traffic volumes.
(e) Wider lanes and limited or no on-street parking

ii. Applicability

(a) Applicable functional classes include:

(i) Local Residential;

(ii) Secondary Collector;

(iii) Primary Collector;

(iv) Minor Arterial; and

(v) Major Arterial

f. Fire Apparatus Access Road

i. Characteristics

(a) Provides fire apparatus access from a fire station to a facility, building or portion thereof

ii. Applicability

(a) Applicable for all developments

F. EXTERNAL CONNECTIONS

All new streets shall align with any existing or proposed streets on adjacent property, and shall continue and extend arterial, collector, and local streets within the proposed subdivision externally to the parcel boundary as follows:

1. New Arterial and Collector streets shall be provided at the intervals identified in this Chapter, or as depicted in the City of Boerne Thoroughfare Plan. All Arterial and Collector streets shall be connected and extended to the boundary of the site.
2. Local street connections shall be provided and extended to the boundary of the site in any subdivision that contains more than 30 residential lots in a manner that all blocks and parcels in the subdivision meet the block standards of the Subdivision Design chapter of the Unified Development Code. The City may require local streets to stub to the property edge where future development or re-subdivision of adjacent property is anticipated. Where there are more than 30 residential lots a second street or separate and approved fire apparatus access road shall be provided.
3. In addition to all of the above requirements, all Commercial development shall have at least one connection to an existing external Arterial or Collector street in the

surrounding transportation network, or to a newly proposed Arterial or Collector street connected to the external network.

4. All Residential development shall have at least one connection to an existing external Arterial or Collector street in the surrounding transportation network, or to a newly proposed Arterial or Collector street connected to the external network. Additional connections similar to the one described above shall be required for each additional set of 50 lots if said connections are practicable, considering the existing and or proposed collector network.

G. STREET CROSS-SECTIONS

1. Requirements

a. All streets in a Transportation Network Plan shall be in keeping with the cross-section design standards of the City.

   i. The appropriate application of each particular design type shall be based upon the planned land uses immediately abutting the street, the overall function of the Transportation Network Plan, the Major Thoroughfare Plan, and any Traffic Impact Analysis required by the City's TIA ordinance, all subject to the review and approval of the City Manager.

b. The cross-section of a street shall be determined based on functional classification, anticipated traffic volume and street design type.

c. Assigned cross sections shall accommodate build-out level traffic conditions as indicated in the TIA.

d. Minor adjustments to cross sections may be permitted but shall be identified in the preliminary plat application. Minor adjustments are allowed for the following:

   i. Approved TIA mitigation method
   ii. Enhanced pedestrian spaces, in addition to minimum lanes required to accommodate projected vehicular traffic volumes
   iii. Increased median width to accommodate median street trees, in lieu of street trees in the parkway space, for collector streets. This solution must be applied consistently for all streets of the same type for which the adjustment is requested throughout the proposed subdivision.

e. The Rural street design type is a special type permitted only for Local or Collector streets in Cluster Developments or Conservation Subdivisions, or in the Rural Residential or Low-Density Residential Development Patterns of the Boerne Master Plan.

f. The Neighborhood street design type is a special type permitted only for residential uses platted with a Grid / Modified Grid or Curvilinear Transportation Network Plan. It may be applied to the Local or Collector street classifications, or to an Arterial street classification as a "Parkway", according to the Cross Section Table of this Section.

g. The Avenue street design type is a special type permitted only for non-residential uses platted with a Grid / Modified Grid Transportation Network Plan, and supporting the Neighborhood, Mixed Use or Commercial Development Patterns in the Boerne Master Plan. It can be applied to Local, Collector or Arterial street classifications, but shall be applied only along those blocks where a pedestrian atmosphere is anticipated and where street designs can transition to slower desired speeds.

h. The Yield Lane shall be limited in application.

i. Sidewalks and Parkways shall be designed and located based on context.

j. Additional landscape or utility easements may be necessary to allow appropriate urban design and still meet the pedestrian and utility accessibility standards.
k. If a trail that provides direct access from each lot is provided, the Planning and Zoning Commission may waive the requirement to have sidewalks on both sides of the street. A 12' concrete (or like material) multi-use trail shall be provided in lieu of a 5' sidewalk/bike lane on some collectors/arterials as determined by the Planning Director.
l. The requirements for medians may be waived by the directors of Public Works and Planning if deemed unnecessary.
m. Right-of-Way classified by TxDOT as an Interstate Highway (IH-10) shall be constructed per TxDOT standards.

2. Street Cross Section Standards

Cross Sections shall be as established in the following table:

FUNCTIONAL CLASS	ACCESS		LOCAL					COLLECTOR								ARTERIAL					
	Residential (All	Commercial (All	Rur [	Neighborhood		Residentia	Avenu[	Rur [		Neighborhood		Avenu [		Secondary	Primar	Parkway / Neighborhood	Avenu[		Min	Maj [	
				Lot widths < 65 ft	Lot widths 65 ft and greater																
Expected Daily Traffic (vehicles per day)	< 250	< 1,000	< 1,000	< 1,000	> 1,000	< 2,500	< 3,000	< 10,000	> 10,000	< 3,000	> 3,000	< 10,000	> 10,000	< 3,000	< 10,000	> 10,000	< 20,000	< 54,000	> 54,000	< 20,000	< 54,000	> 54,000
Desired Vehicle Speeds	< 10 mph	< 10 mph	25 – 30 mph	25 - 30 mph	25 - 30 mph	25 – 30 mph	< 25 mph	30 – 35 mph	30 – 35 mph	30 – 35 mph	30 – 35 mph	< 25 mph	> 25 mph	30 – 35 mph	35 – 40 mph	35 – 40 mph	35 – 40 mph	< 25 mph	> 25 mph	40 – 45 mph	45 + mph	45 + mph
Right-of-way Width **[4]**	20’	26’	56’	60’	54’	60’	66’	62’	84’	56’	62’	70’	108’	74’	72’	94’	100’	92’	112’	104’	108’	132’
Traffic Lanes **[5]**	1 yield	2	2	2	1 yield	2	2	2	4	2	2	2	4	2	2	4	4	2	4	4	4	6
Lane Width **[5]**	14’ yield lane	10’	10’	10’	14’	10’	10’	11’	11’	11’	11’	10’	10’	11’	11’	11’	11’	10’	10’	12’	12’	12’
On-street Parking Type	--	--	--	Both sides	Both sides	Both sides	Both sides	--	--	One side	Two sides	Both sides	Both sides	Both sides,	--	--	--	Both sides	Both sides	--	--	--
On-street Parking Width	--	--	--	8’ parallel	8’ parallel	8’ parallel	8’ parallel	--	--	8’ parallel	7’ parallel	8’ parallel	17’ angled	8’ parallel	--	--	--	17’ angled	17’ angled	--	--	--
Median (min. width / min. uninterrupted length) **[7]**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	14’ / 330’	14’ / 330’	20’ / 330’	--	--	16’ / 660’	20’ / 660’	20’ / 660’
TOTAL Paved Width (including median)	20’	26’	28’	36’	30’	36’	36’	30’	52’	30’	36’	36’	74’	48’	46’	68’	64’	54’ (2-ln)	74’ (4-In)	74’	78’	102’
Sidewalk width / Both sides**[6]**	--	--	--	5’	5’	5’	8’	--	--	5’	5’	10’	10’	5’	5’	5’	8’	12’	12’	5’	5’	5’
Parkway **[6]**	--	--	--	7’	7’	7’	7’	--	--	8’	8’	7’	7’	8’	8’	8’	10’	7’	7’	10’	10’	10’
Borrow Ditch	--	--	14’	--	--	--	--	16’	16’	--	--	--	--	--	--	--	--	--	--	--	--	--
Shoulder width	--	--	4’	--	--	--	--	4’	4’	--	--	--	--	--	--	--	--	--	--	--	--	--
*Bike Lanes	--	--	--	--	--	--	--	--	--	--	--	--	--	5’	5’	5’	--	--	--	5’	5’	5’
Landscape / Utility Easement **[6]**	--	--	--	10’	10’	10’	N/A	--	--	10’	10’	N/A	N/A	10’	10’	10’	10’	--	--	10’	5’	10’
*Bike Lanes	See Bike Facility standards 3.02.003.B																					
Driveway Access	See Lot Access standards in Article 3, Section 3.04.004 of the subdivision regulations and any applicable lot access and design standards of the Boerne Zoning Ordinance.																					

H. LIMITATION ON YIELD LANES

Yield lanes are narrower lanes that accommodate two-way traffic, although at certain sections of the street it may only allow one un-obstructed moving lane. This is most common on streets that allow on-street parking where the presence of parked cars is not continuous on the length of the street or not present at all times of the day. Yield lanes are only appropriate on Access streets or on Local streets supporting only residential uses. Use of these types of lanes shall be limited to the standards in Table 3-5:

TABLE 3-5: LIMITATIONS ON YIELD LANES

DWELLING UNITS **[1]**	LENGTH LIMITATION **[2]**	QUEUING REQUIREMENTS **[3]**
< 20	800'	No specific queuing area required
20 TO 30	660'	Queuing areas at least every 150 feet
> 30	440'	Queuing area at least every 200 feet

[1] Dwelling units refers to the total number of dwelling units that have frontage on the particular section of street between two intersecting streets. Any accessory dwelling units permitted are not counted in this number.

[2] Length specifies maximum distance between intersections with other through streets, measured from the centerlines of the intersecting streets.

[3] "Queuing areas" may be any area in the finished street design that allow for the pull-out and stopping of at least one vehicle to allow for oncoming vehicles to pass. Examples include driveway curb-cuts that prohibit parking in the on-street parking lane or other similar designs that prohibit parking, or effectively widen the street to allow 2 cars to pass at all times.

I. BICYCLE FACILITY STANDARDS

Bicycle facilities shall be added to any street designated as a Secondary Collector or larger street or in an official transportation plan or trail plan of the City as a bicycle route, and should be added at any other location where bicycle transportation is likely. The Bicycle Facility Standards in Table 3-6 shall be used in amending the typical Street Cross-sections in Table 3-4, and added to the minimum right-of-way width.

TABLE 3-6: BICYCLE FACILITIES

FACILITY TYPE	DIMENSION	APPLICABILITY
DEDICATED BICYCLE LANE	5' to 6' minimum, each lane and located immediately adjacent to outermost vehicle lanes and included in the Total Paved Width	Required on identified bike routes with vehicle speeds above 35 mph, unless Off-street Multi-use Trail provided

Shared Bicycle Lane	4' added to outer most vehicle lane, but no more than 14' total lane width	Acceptable on identified bike routes with speeds below 35 mph
Combined Vehicle/ Bicycle Lane	No designated area, as bicycles and vehicles share the same space with low vehicle speeds	Acceptable on any portion of the street with design speeds of 25 mph or less; often associated with streets with yield lanes or where angled parking is allowed.
Off-street Multi-Use Trail	10' to 12' minimum, located adjacent to roadway in the Parkway	Preferred on identified bicycle routes with vehicle speeds above 35 mph or where on-street facilities are not appropriate or are impractical. Particularly where Greenways (Article 3, Section 03) are located along the roadway.

J. UTILITY CLEAR ZONES

Utility Clear Zones. Utilities may be located in the right-of-way or within easements if designed consistent with Table 3-7. Easement locations in alleys or utility corridors out of the right-of-way may also be acceptable to allow appropriate urban design and application of the Cross-section standards in Table 3-4. However, to allow proper maintenance and function of utilities, the following standards shall apply to Utility Clear Zones, whether in the right-of-way, easement, or in alleys and utility corridors.

Table 3-7: Trees and Utility Clear Zones

Tree Type	Distance from Overhead Lines (< 600 volts)	Distance from Overhead Lines (> 600 volts)	Distance from Utility Pole or Street Light	Distance from Underground Lines (all utilities)
Small / Ornamental	No limit	No limit	10 feet	5 feet
Medium / Ornamental or Shade	7 feet	20 feet	20 feet	5 feet
Large / Shade	7 feet	30 feet	30 feet	7 feet

* Distance measured in lateral feet from the center of the line to the center of the tree. Large/Shade Trees are species that reach over 50' total height at maturity; Medium/ Ornamental or Shade Trees are species that reach between 20' and 50' total height at maturity; Small/Ornamental trees are species that reach under 20' total height at maturity.

K. PEDESTRIAN FACILITIES

1. The pedestrian facilities and parkway of the right-of-way shall be designed to best balance the need for clear utility access and maintenance, for direct pedestrian connections, and for enhanced civic design of the right-of-way. The following are the minimum standards to effectively balance these needs. An additional landscape or

utility easement may be necessary on the edge of the right-of-way to allow the most appropriate urban design while meeting these needs.

2. Pedestrian facilities required by Table 3-4 shall always be separated from moving traffic lanes of the roadway by a landscape buffer and only located immediately adjacent to the finished street as an expanded pedestrian amenity area where on-street parking will likely be present.

    a. In all cases where sidewalks are provided, they shall be at least 5 feet wide to permit two persons to walk side-by-side comfortably.
    b. If direct access to a trail from each lot is provided the Planning and Zoning Commission may waive the requirement to have sidewalks on both sides of the street.
    c. On any block face below 3.5 dwelling units per acre, sidewalks on only one side may be acceptable, provided the Planning Commission determine that the street is not important to the overall pedestrian network.
    d. On any block face that includes a Green Way and 10' to 12' multi-purpose trail, sidewalks are not required.

L. PARKWAYS

1. The Parkway shall be designed to buffer pedestrians from moving traffic lanes.
2. All planting in the should be coordinated with Utility Clear Zone guidelines in Section 3.02.003.C.1, and any planting in this area may be counted towards a landscape requirement of the zoning regulations.
3. Species should be based on guidance from the Texas Forest Service, Urban Forestry Program, or other similar guidance on species appropriate to South-Central Texas, and the following standards

    a. In cases where large shade street trees are planted between the street edge and the
    b. sidewalk, the parkway shall be at least 6' wide (7' to 8' preferred) to avoid the root zone disturbing or heaving the sidewalk when trees reach maturity.
    c. In cases where medium or small trees are planted between the street edge and the
    d. sidewalk, the parkway should be at least 5' wide (6' to 8' preferred) to avoid the root zone disturbing or heaving the sidewalk when trees reach maturity.
    e. In all cases where a parkway is provided between the street edge and the sidewalk, low shrubs and/or perennial ground cover shall be planted.
    f. In cases where on-street parking is provided and will serve as a buffer between pedestrians and moving vehicles at most times of the day, the parkway may be designed as an extension of the sidewalk to provide transitional pedestrian amenity area. Ornamental or small street trees may be planted in tree-wells within an expanded pedestrian amenity area. Tree wells shall be large enough to ensure sufficient soil areas for the survival of the tree species and shall generally have at least 30 square feet of impervious area, or otherwise include constructed soil volumes for the roots to access. Tree wells should be spaced at regular intervals, typically every 25' to 60'. The under canopy of all trees should be sufficient to allow a clear view of all store-fronts along the street.
    g. Parkways on Rural street design types, or any other streets where no sidewalks may be required, should have expanded parkways with more informal, rough, low-maintenance and natural vegetation. These areas may need to incorporate trails or multi-use bicycle/pedestrian facilities in some cases and planting may occur in or along borrow ditches provided all drainage functions may be retained with no additional maintenance.

4. Civic Open Space Credit

Where the Parkway and pedestrian facilities in the right-of-way in excess of the requirements of this Section, and where these areas are designed to create a greater civic amenity by meeting the Open Space Standards of this Chapter, the areas in excess of the minimum right-of-way standards may contribute to the Park Land Dedication requirement of the proposed subdivision.

7.3. STREET SPECIFICATIONS AND CONSTRUCTION STANDARDS

A. GENERAL LAYOUT AND ALIGNMENT OF STREETS

1. Adequate streets shall be provided by the subdivider, and the arrangement, character, extent, width, grade and location of each shall be as specified in this Chapter.
2. Private streets are restricted, conforming to the conditions of this Section.

B. REQUIRED STREET IMPROVEMENTS

1. General Specifications

   a. In the City limits or in the exterritorial jurisdiction (ETJ) of the City of Boerne, the subdivider/developer shall, at his/her sole cost and expense, provide all necessary street grading, pavement, curbing, gutters, sidewalks, bike lanes and storm sewer drains required to service the subdivision as identified by the City of Boerne Thoroughfare Plan, including the perimeter streets contiguous to the subdivision.
   b. All street improvements shall meet the typical street cross-sections specified in Article 3, Planning and Community Design Standards unless an exception has been approved by the Planning and Zoning Commission and City Council.

2. Street Improvement – Timing

   a. Streets improvements as set forth in Table 3-4: Street Cross-Section Standards of this ordinance, shall be made at such time as subdivision or development occurs.
   b. If a street improvement is required to be made to an existing street, arterial, collector or street identified in the Thoroughfare Plan, the improvement shall be made to the entire length of the development that is contiguous to that street.

3. Street Geometry Standards

   a. General Requirements

The design of all streets in a subdivision shall conform to the standards of street geometry in the following table. **STREET GEOMETRY STANDARDS**

Street Functional Classification	Pavement Crown or Cross Slope	Minimum Grade	Maximum Grade	Centerline Minimum Horizontal Curve Radius
Regional Thoroughfare	Min. 2%	0.5%	6%	1,200'
Arterial	Min. 6" or 2%	0.5%	6%	600'
Collector	6" or 2%	0.5%	8%	400'
Local	5" 0r 2%	0.5%	10%	150'
Local – Neighborhood (L-NH) or Local – Rural (L-RR)	4"	0.5%	10%	100’
Residential Alley	7"	0.5%	10%	50'
Commercial Alley	7"	0.5%	10%	50'

   b. Exceptions to Minimum Radius Requirement

Exceptions to the minimum centerline horizontal radius requirement in this Section may be granted only by the City Council upon appeal from the Planning and Zoning Commission at preliminary plat approval.

c. Reverse Curves

Reverse curves shall be separated by a minimum tangent of 100 feet, except that the Planning and Zoning Commission may waive this requirement for Local streets where the Commission finds that an exception is justified by the topography of the site and by the sight distance, right-of-way width, setbacks and other features of the subdivision design.

d. Vertical Curvature

i. A gradual transition from one roadway grade to another shall be accomplished by means of a vertical parallel curve connecting two intersecting tangents. The minimum length of vertical curve shall be computed from the following formula and table:

L = KA

Where: L = the length of vertical curve in feet

K = a constant related to sight distance and geometry of a parabolic curve (see Table 5-2) A = the algebraic difference in grades in percent.

TABLE XX.XX: DESIGN VALUES FOR CONSTANT "K," VERTICAL CURVATURE

Street Classification	"K" Crest Curves	"K" Sag Curves
Regional Thoroughfare	70	60
Arterial	70	60
Collector	55	55

8.

4. Standards for Pavement Design

a. Pavements shall be designed using site specific soil and geologic design considerations to assure reasonable durability and economy of maintenance.
b. Proper documentation of the engineering and design techniques, and performance and maintenance data must be shown.
c. Approval of these designs shall be subject to the review of the City Manager.

5. Minimum Pavement Design Standards

a. The pavement of all streets and alleys shall meet the minimum specifications in the following table.

TABLE XX.XX: MINIMUM PAVEMENT DESIGN STANDARDS (OVER COMPACTED SUBGRADE)

Street Classification	Asphaltic Concrete (in.)	Crushed Limestone (in.); or	Asphalt Stabilized Base (in.)
Regional Thoroughfare	3.5 in.	12	10
Arterial	3 in.	12	10
Collector	2 in.	10	8
Local	1.5 in.	8	6
Residential Alley	1.5 in.	8	6
Commercial Alley	3 in.	12	10
Bikeway / Path	Bikeway/paths shall be, six (6) inches ~~of~~ cement stabilized crushed limestone base (2,500 – 3,000 psi), 1 ½ inches of asphaltic concrete over 6" crushed limestone base, or 4" of concrete over 2" crushed limestone base.		

b. Soils Investigation

i. The subdivider shall, at his/her own expense, cause to be made a soils investigation by a qualified and independent geotechnical engineer licensed to practice in the State of Texas.
ii. The field investigation shall include test borings within the rights-of-way of all proposed streets.
iii. The number and locations of such borings shall be subject to the approval of the City Manager.
iv. Atterberg limits and moisture contents shall be determined for all significant boring samples.
v. The method used for these determinations shall be the same as that used by the Texas Department of Transportation using their latest Manual of Testing Procedures, 100-E Series test methods.
vi. The results of the soils investigation shall be presented to the subdivider and to the City Manager in written report form.
vii. Included as a part of the report shall be a graphical or tabular presentation of the boring data giving Atterberg limits and moisture contents, a soil description of the layers of different soils encountered in the profile of the hole, their limits in relation to a fixed surface datum, and such other information as needed to complete the soils investigation for pavement design purposes.
viii. Minimum depth of soil profile boring holes shall be 10 feet unless solid rock formations are encountered sooner.

c. Pavement Design Loads

i. Pavement design shall be based on the Texas Department of Transportation tri-axial design standards in the following table.

TABLE XX.XX: MINIMUM PAVEMENT LOAD STANDARDS

Street Classification	Total Equity 18 Kip Single Axle Load Applications	Average Ten Heavy Wheel Loads Daily	Load Frequency Design Factor	Minimum ACP Thickness	Minimum ~~Flex~~ Crushed Limestone Base; or	Minimum ASB
Regional Thoroughfare	500,000	10,500	1.05	3.5	12	10
Arterial	300,000	10,000	1.00	3	12	10
Collector	300,000	10,000	1.00	2	10	8
Local	60,000	6,000	0.80	1.5	8	6

ii. A written report containing pavement design data and recommendations based on the soils investigation shall be prepared at the subdivider's expense by a qualified geotechnical engineer licensed to practice in the State of Texas, and shall be presented to the subdivider and to the City Manager.
iii. The report shall state the load criteria and the soil classifications used.
iv. When approved by the City Manager, the geotechnical engineer preparing the report may use the tri-axial classification soils data given in Texas Department of Transportation report number 3-05-71-035, entitled "Triaxial Classification of the Surface Soils of Texas, as Grouped by Soil Conservation Service Series."
v. When using the tri-axial data, the report shall so state. The pavement design shall be subject to the approval of the City Manager and shall be shown on the street construction plans as approved. Where the plasticity index of the sub grade soil on which the street is to be built is in excess of 20, the pavement design shall include sub grade stabilization unless approved otherwise by the City Manager.
vi. When sub grade soils are stabilized the minimum depth of stabilization shall be six inches unless otherwise approved by the City Manager. In the stabilization of swelling clay soils, the stabilizer used shall be hydrated lime. The lime shall be applied to the sub grade soil in slurry form unless otherwise approved by the City Manager. Base material and the stabilized layer, if used, shall extend at least 18 inches behind of the back of the curb.

6. Curbs

a. All streets shall have concrete curbs extending seven and one-half inches above the pavement surface and shall be reinforced with 1- #4 continuous longitudinal reinforcing bar (minimum) centered in the curb section.
b. The minimum total curb height shall be 9 inches.
c. Compacted backfill shall be placed on all of the rights-of-way behind curbs to a minimum elevation equal to the top of the curb.
d. Normal curb exposure shall be required where utility easements intersect streets. Continuously reinforced flush curbs (minimum total depth of 9 inches) may be provided at driveway areas.
e. Flush curbs are required on streets using the Rural Design Type in Article 3.

7. Sidewalks – Timing

a. Sidewalks, the width set forth in Table 3-4: Street Cross-Section Standards of this ordinance, shall be installed in the appropriate location adjacent to all properties

fronting a street at such time as that lot is developed in the City limits or in the ETJ of the City of Boerne. This includes all lots/tracts or parcels that front any portion of IH-10 right-of-way. Locations of sidewalks within State right-of-way shall be as directed by TxDOT and a sidewalk permit must be approved by TxDOT, prior to construction within State right-of-way. Sidewalks, or trails in lieu of sidewalks that are on a main thoroughfare and do not front on a lot shall be constructed with the street improvements in order to provide safety and connectivity within the development.

b. Construction of the sidewalks on each street is not necessary until construction begins on the first building on that street. However, to avoid undue costs and damage to sidewalks, the subdivider, developer or builder may construct the sidewalk on each lot as it is developed. In no case will a Certificate of Occupancy be issued for a building until the required sidewalks have been constructed. In areas, sites, or other portions of streets where no building will be constructed and sidewalks are required by these regulations, the sidewalks shall be constructed with other required street infrastructure. Sidewalks, including portions within any driveway aprons, shall meet City and TDLR standards.

8. Driveways

   Driveway aprons in the public right-of-way shall be constructed of concrete and according to City and TDLR design standards.

9. Traffic Control Signs and Street Signs

   All traffic control signs shall be provided and installed by the subdivider and shall conform with the 2006 Texas Manual on Uniform Traffic Control Devices. All street signs shall be provided and installed by the subdivider and meet the City's standard specifications and sign patterns.

10. Street Lighting

    Street lighting according to the city design standards shall be provided by the subdivider at all intersections, street alignment changes greater than 45 degrees, and at the end of any cul-de-sac or other disconnected street permitted by Article

11. Private Streets

    a. Private Streets

       i. Private streets are allowed in certain subdivisions only under the terms set forth in this Section, and pursuant to any other ordinances or guidelines for private street developments as may be adopted for use by the City.
       ii. All private streets shall be designed and constructed in accordance with this ordinance and applicable Standard Construction Details for publicly dedicated streets.
       iii. The term Private Street shall be inclusive of alleys, if such are provided within the subdivision.

    b. Subdivision Eligibility Criteria

       Private streets shall be permitted only within a subdivision satisfying each of the following criteria:

i. The subdivision shall have a sufficient number of lots and value to demonstrate through an approved economic analysis the viability of private maintenance by the development served;
ii. The streets to be restricted to private use are not intended for regional or local through traffic circulation;
iii. The subdivision shall have restricted access as delineated in subsection (5.11.009) below;
iv. The subdivision is located adjacent to an existing or approved public street that can be reasonably connected, even though the street connection may require the construction of a bridge or culvert;
v. The subdivision shall have at least two (2) points of vehicular access connected via improved roadways to the City's thoroughfare and street system by one or more approach roads;
vi. A mandatory property owners (homeowners) association, which includes every owner of a lot within the private street development, shall be formed and shall be responsible for maintenance of the private streets and alleys (see Subsection 5.11.005 below); and
vii. The subdivision conforms to any other special guidelines for private street developments as may be approved separately by the City Council.

c. Certain Streets Excluded

i. Roads or streets that are shown on the City's Thoroughfare Plan, such as highways, major or minor thoroughfares or arterials, or collectors, shall not be used, maintained or constructed as private streets, and a private street subdivision shall not cross or interfere with an existing or future collector or arterial street.
ii. Also, the Planning and Zoning Commission may deny the creation of any private street if, in their sole determination, the private street would negatively affect traffic circulation on public streets, or if it would impair access to the subject or adjacent property; impair access to or from public facilities including schools or parks; or if it would cause possible delays in the response time of emergency vehicles.

d. Parks, Greenbelts and Wildlife Preserves Excluded

A private street subdivision shall not cross, interfere or hinder public access to an existing or future public pedestrian pathway, hike and bike trail, greenbelt, park or wildlife preserve as shown on the City of Boerne's Parks and Open Space Master Plan or as already dedicated for public use.

e. Property Owner's or Homeowners' Association Required

i. Subdivisions developed with private streets shall have a mandatory property owners' or homeowners' association (the "Association"), which must include all property and lots served by the private streets and be in accordance with requirements of this Chapter.
ii. The Association documents shall be reviewed and approved by the City Manager and the City Attorney to ensure that they conform to these and other applicable City requirements prior to final plat approval.
iii. The Association documents shall be filed of record at Kendall County prior to final plat acceptance in order to ensure that there is an entity in place for long-term maintenance of private streets and all related appurtenances.
iv. The Association may not be dissolved without the prior written consent of the City Council.

v. No portion of the Association documents pertaining to the maintenance of private streets and alleys, and assessments therefore, may be amended without the prior written consent of the City Council.
vi. The Association shall own and be responsible for the maintenance of private streets and appurtenances and the City shall not be required to pay for or assist with any portion of the construction or maintenance of such private streets.
vii. The Association shall provide for the payment of dues and assessments required to maintain the private streets.
viii. Out of such dues and assessments, the Association must establish a reserve fund for the maintenance of private streets and other improvements such as common greenbelts, security station structures and equipment, and other significant Association infrastructure.

(a) This reserve fund shall not be commingled with any other Association fund.
(b) The balance of the fund shall be equal to the total replacement cost of the private streets and other improvements divided by the average life expectancy of those improvements times the age of the improvements. The life expectancy for a subdivision with private streets shall be a minimum of twenty (20) years.
(c) The Association shall have an annual review performed by a certified public accounting firm verifying the amount in the reserve fund. A copy of the review shall be provided to City.
(d) If the private streets are converted to public streets, the reserve fund shall become the property of the City.

ix. The Association documents shall provide that should the Association fail to carry out its duties as specified in these regulations, the City or its lawful agents shall have the right and ability, after due notice to the Association, to perform the responsibilities of the Association if the Association fails to do so in compliance with any of the provisions of these regulations or of any applicable City Codes, regulations or agreements with the City and to assess the Association or the individual lot owners for all costs incurred by the City in performing said responsibilities if the Association fails to do so, and the City shall further have any and all liens and lien rights granted to the Association to enforce the assessments required by the declaration and/or to avail itself of any other enforcement actions available to the City pursuant to state or City codes and regulations.
x. Pursuant to Section 542.008 of the Transportation Code, the Association documents shall provide that all traffic rules and regulations enforced and applied by the City on all public streets, alleys and rights-of-way governing the operation and movement of vehicles are extended to all private streets, alleys and rights-of-way within the subdivision. All such streets, roads, alleys, and rights-of-way are governed and controlled by all traffic laws set forth in state law and City ordinance.

f. Private Street Lot

i. Private streets must be constructed within a separate lot owned by the Association. Private streets must conform to the City's standards for public street rights-of-way.
ii. An easement covering the street lot shall be granted to the City and its employees providing unrestricted access to and use of the private streets

and private street lot in pursuit of their official duties, private Street rights of way or lots shall be dedicated as utility easements so that the utilities can be installed in their usual locations and configurations.

iii. This right shall also extend to all utility providers operating within the City and to other necessary governmental service providers, such as the U.S. Postal Service.

iv. The easement shall also permit the City to remove any vehicle or obstacle within the private street lot that may impair emergency access.

v. The easement shall also allow emergency vehicle access to the lot and enforcement of all laws and ordinances therein.

vi. The City will not assist in enforcing deed restrictions.

g. Infrastructure and Utilities

i. Any public water, reclaimed water, gas, sewer and drainage facilities, street lights, and traffic control devices, such as traffic signs, placed within the private street lot shall be designed and constructed to City standards, and shall be accepted by and dedicated to the City prior to filing the record plat for the subdivision.

ii. All private traffic control devices and regulatory signs shall conform to the Texas Manual of Uniform Traffic Control Devices, as may be amended, and to City standards.

iii. Should it be necessary that the City erect and place such traffic control signs, signals and devices as may be necessary or appropriate in the application and extension of traffic rules and regulations to the subdivision, all costs of erection, placement, replacement, maintenance and/or removal shall be borne by the Association such sum shall include but not be limited to the acquisition of property for sign placement.

iv. The metering for utilities such as water, reclaimed water, gas and electricity shall be located on the individual lots to be served, not grouped together in a centralized location(s), such as “gang-box” style metering stations, which shall not be permitted.

h. Plans and Inspections

i. Development applications for subdivisions with private streets must include the same plans and engineering information required for public streets and utilities.

ii. City requirements pertaining to inspection and approval of improvements shall apply.

iii. The City may periodically inspect private streets and may require any repairs necessary to ensure efficient emergency access and to protect the public health, safety, convenience and welfare.

i. Restricted Access

i. The entrances to all private streets shall be clearly marked with a sign, placed in a prominent and visible location, stating that the streets within the subdivision are private, and that they are not maintained by the City.

ii. Guard houses, access control gates, and cross arms, if used, shall be constructed per Subsection (i) herein below.

iii. All restricted access entrances must be manned twenty-four (24) hours every day, or they must provide a reliable, alternative means of ensuring City and emergency access to the subdivision for emergency access, the Fire Chief shall approve of all alternative means of access, by the City and other

utility or public service providers, such as postal carriers and utility companies, with appropriate identification.

iv. The method to be used to ensure City and emergency access into the subdivision shall be approved by all applicable emergency services providers prior to engineering release for construction of the development.

v. If the Association fails to maintain reliable access as required herein, the City may enter the subdivision and remove any gate or device which is a barrier to access at the sole expense of the Association.

vi. The Association documents shall contain provisions in conformity with this Section which may not be amended without the written consent of the City Council.

j. Access-Restricted Entrance Design Standards

i. A gated community shall not impede the current or future development of a collector street or arterial or another minor or major thoroughfare identified in the City's Master Thoroughfare Plan.

ii. A gated community shall not disrupt an existing or proposed public pedestrian pathway, bike trail or park.

iii. Private or restricted access entry features shall not impede necessary sight lines for traffic, nor create vehicular stacking that adversely affects an adjacent street.

iv. Any private street (and any other type of controlled access entrance street) which has an access control gate or cross arm must have a minimum uninterrupted pavement width of twenty-seven feet (27) at the location of the gate or access control device, both ingress point and egress point, regardless of the type of device used.

v. There shall be at least two points of ingress and egress, except for a gated community containing no more than 30 dwelling units. The second entry may be designated for emergency access only.

vi. A site plan showing the design and location of all proposed access restricted entrances shall be submitted for review by the City Manager or designee, along with the engineering plans for the subdivision, and must be approved by the Planning and Zoning along with approval of the preliminary plat.

vii. All private traffic signs shall conform to the Texas Manual of Uniform Traffic Control Devices, as amended, and city ordinances and regulations.

viii. Access Standards

(a) If an overhead, or lift-up, barrier is used, it must rise to a minimum of fourteen feet (14) in height above the road surface, and this clearance height shall be extended for a minimum distance of fifty feet (50) in front of and behind the location of the device.

(b) All gates and cross arms must be of a breakaway design.

(c) A minimum vehicle stacking distance of one hundred feet (100) shall be provided from the right-ofway line of the public road from which the private street subdivision is accessed to the first vehicle stopping point, which point is usually an access request keypad, a telephone, and/or a guard's window.

(d) Adequate distance shall be provided between the access request point(s) and the entry barrier, or gate, to accommodate a vehicle turnaround as described below.

ix. Turnaround Requirement

(a) A paved turnaround space must be located in front of (i.e., prior to passage through) any restricted access entrance barrier, between

the access request device and the barrier or gate, to allow vehicles that are denied access to safely exit onto public streets without having to back up, particularly into the public street upon which the entrance is located.

(b) The design and geometry of such turnaround shall be of sufficient pavement width and having such inside turning radius that it will accommodate smooth, single-motion U-turn movements by the types of service and utility trucks that typically visit or make deliveries to neighborhoods that are similar to the proposed private street development including by way of reference and not limitation utility service vehicles, postal or UPS delivery trucks, and two- to three-axle flatbed or box-type trucks used by contractors and moving companies.

(c) The City Public Work's Director, or designee, may require submission of additional drawings, plans or exhibits demonstrating that the proposed turnaround will work properly, and that vehicle turnaround movements will not compromise public safety on the entry and/or exit roadway or on the adjacent public street(s).

x. Electric gates shall be equipped with a means of opening the gate by fire department personnel for emergency access.

xi. Emergency opening devices shall be approved by the fire code official.

xii. Gate components shall be maintained in an operative condition at all times and replaced or repaired when defective.

k. Petition to Convert to Public Streets

i. The Association documents shall allow the Association to petition the City to accept private streets and any associated property as public streets and rights-of-way upon written notice to all Association members and upon the favorable vote of a majority of the membership.

ii. However, in no event shall the City be obligated to accept said streets as public streets.

iii. Should the City elect to accept the streets as public streets, then the City has the right to inspect the private streets and to assess the lot owners for the expense of needed repairs concurrent with the City's acceptance of the streets.

iv. The City shall be the sole judge of whether repairs are needed.

v. Upon acceptance of the private streets as public streets the City may also require, at the Association's or the lot owners' expense, the removal of any guard houses, access control devices, landscaping or other aesthetic amenities located within the street lot or within any other roadway common area that are not consistent with a public street development.

vi. The Association documents shall provide for the City's right to such removal and assessment.

vii. Those portions of the Association documents pertaining to the subject matter contained in this Section shall not be amended without the written consent of the City Council.

viii. However, the Association documents must be modified and re-filed to remove requirements specific to private street subdivisions at such time as the City accepts the private streets as public streets.

l. Hold Harmless

i. The subdivision final and recorded plat shall contain language whereby the property (or home) owners' association, as owner of the private streets and

appurtenances, agrees to release, indemnify, defend and hold harmless the City, any other governmental entity, and any public utility for damages to the private streets that may be occasioned by the reasonable use of the private streets by same, and for damages and injury (including death) arising from the condition of the private streets, out of any use of access gates or cross arms, or out of any use of the subdivision by the City or governmental or utility entity (such plat language is available from the City).

m. Required Disclosures

The Association documents shall address, but shall not be limited to, the following five paragraphs:

i. The Association documents must indicate that the streets within the development are private, owned and maintained by the Association and that the City has no obligation to maintain or reconstruct the private streets.
ii. The Association documents shall include a statement indicating that the City may, but is not obligated to, inspect private streets, and require repairs necessary to insure that the same are maintained to City standards.
iii. The Association may not be dissolved without the prior written consent of the City.
iv. That the Association and the lot owners agree to release, indemnify, defend and hold harmless the City, its officers, agents licensees, servants, contractors and/or employees ("Indemnitees"), from and against any and all claims or suits for property damage or loss and/or personal injury of whatever kind or character arising out of or in connection with, directly or indirectly: (a) the
v. reasonable use of the private streets, emergency access, utility easements, entrance gate or structures by the Indemnitees; (b) the condition of the private streets, private entrance gates or structures, private walls and fences, private pedestrian access, private storm drainage systems and emergency access; or (c) any use of the addition by the Indemnitees for any purpose stated hereinabove, whether or not caused, in whole or in part, by the alleged negligence of the Indemnitees. The Association shall be responsible for carrying liability insurance to meet the requirements of this paragraph.
vi. The Association documents shall provide that all traffic rules and regulations enforced and applied by the City on all public streets, alleys and rights-of-way governing the operation and movement of vehicles are extended to all private streets, alleys and rights-of-way within the subdivision. All such streets, roads, alleys, and rights-of-way are governed and controlled by all traffic laws set forth in state law and City ordinance.

n. Property Owners' or Homeowners' Associations

i. Applicability

An incorporated nonprofit Association must be created when a subdivision contains private streets or any other improvements not intended to be dedicated to the City of Boerne for public use. Such private streets, recreation facility, landscaped entry features or any other private amenity shall hereafter be referred to collectively as "Common Areas". The Association shall also be responsible for the maintenance of all landscaping,

buffering, screening, irrigation and associated improvements adjacent to residential subdivisions along public thoroughfares.

ii. An Association agreement consistent with State and other appropriate laws must be submitted to and approved by the City Manager and made a part of the final plat documents. The restrictive covenants – Covenants, Conditions and Restrictions ("CCRs") -- and the Association documents including articles of incorporation and by-laws shall be submitted to the City for review and approval along with the preliminary plat application, and shall be filed at Kendall County prior to final plat acceptance in order to ensure that there is an entity in place for long-term maintenance of these Common Areas. The Association's CCRs shall provide for continuous maintenance and control of the Common Areas by a responsible body, in perpetuity, for the benefit of the homeowners. Such maintenance and control shall be performed without using public funds. In the approval of the above documents, the City shall determine that the proper legal position is ensured and that the proposed Association will function properly both during and after the time in which the developer is active in the subdivision.

iii. The Association agreement must include provisions that allow, but do not require, the City to take over the maintenance of the Common Areas, including private streets, using Association funds if such action becomes necessary due to request of the Association, nonperformance or inaction by the Association and/or if the Association becomes defunct. The following provisions shall also be included in the Association Agreement which would control in the event the City is asked to take over the maintenance of the Common Areas by the Association:

(a) Grant the City all the rights of the Association to either file a lien on property within the subdivision or assess property owners within the subdivision for the costs of maintaining, repairing, replacing or making safe any Common Areas;

(b) In the sole discretion of the City, convey to the City ownership of all or part of the Common Areas either before or after exercising the City's rights under (a) herein above; and

(c) Authorize the City, upon taking ownership of the Common Areas to remove any improvements or amenities from the Common Areas and sell any buildable land area as residential lots to recoup the City's expenses for maintenance or demolition of the improvements. Any money that remains after the City has recovered all of its expenses, including any necessary and reasonable legal expenses, shall be retained for future maintenance or upgrading of the Common Areas (if any remain), screening walls, or other improvements within the subdivision. These provisions are not intended to allow the City to profit in any way from taking over the Association's responsibilities or funds; they are only intended to allow the City to recoup its actual incurred expenses.

iv. Membership

The Association shall be an incorporated nonprofit organization operating under recorded land agreements through which:

(a) Each lot owner within the described land area is automatically a mandatory member of the Association and such membership shall run with the title to each lot; and

(b) Each lot is automatically subject to a charge for a proportionate share of the expenses for the Association's activities, such as maintenance and upkeep of Common Areas. That is, membership in the Association is not voluntary and its primary source of operating funds is a periodic assessment levied against each parcel of land within the development under recorded covenants which shall be incorporated into each deed and which shall run with the land to bind each and every owner of it and which are enforceable as a lien against the land.

v. Association Contact Information

The Association shall provide and maintain an address and telephone contact with the City Secretary's office of the City of Boerne.

vi. Legal Requirements

In order to assure the establishment of a proper Association, including its financing, and the rights and responsibilities of the property or home owners in relation to the use, management and ownership of Common Areas, the subdivision plat, dedication documents, covenants, and other recorded legal agreements must:

(a) Legally create an automatic membership, non-profit Association;
(b) Save the title to the Common Area properties for the benefit of the Association and express a definite undertaking by the developer to convey the Common Areas to the Association;
(c) Tie the covenants and use provisions to the plat so that collection of fees and denying use is legally supportable;
(d) Appropriately limit the uses of the Common Areas;
(e) Give each lot owner the right to the use and enjoyment of the Common Areas;
(f) Place responsibility for operation and maintenance of private streets and the Common Areas in the
(g) Association in perpetuity;
(h) Place an Association charge on each lot in a manner which will both assure sufficient Association funds and which will provide adequate safeguards for the lot owners against undesirable high charges;
(i) Establish each lot owner's obligation to pay assessments for the maintenance and operation of the Common Areas which shall be set aside in a reserve fund subject to the following restrictions:

(i) This reserve funds shall not be commingled with any other Association fund;

(ii) The balance of the fund shall be equal to the total replacement cost of the improvements divided by the average life expectancy of such Common Areas times the age of the improvements. The life expectancy for a subdivision with private streets shall be a minimum of twenty (20) years;

(iii) The Association shall have an annual review performed by a certified public accounting firm verifying that the amount in the reserve fund complies with the requirements herein and copy of the review shall be provided to City; and

(iv) If the private streets and Common Areas are converted to the public, the reserve fund shall become the property of the City.

(j) Give each lot owner voting rights in the Association; and

(k) Identify land area within the Association's jurisdiction including but not limited to the following:

(i) Property to be transferred to public agencies;

(ii) The individual residential lots;

(iii) The Common Areas to be transferred by the developer to the Association; and

(iv) Other parcels.

vii. Government Access

Any governmental authority or agency, including, but not limited to, the City and the County, their agents, and employees, shall have the right of immediate access to the Common Areas at all times if necessary for the preservation of public health, safety and welfare.

viii. Traffic Enforcement

The Association, its members and the City of Boerne agree that all traffic rules and regulations enforced and applied by the City on all public streets, alleys and rights-of-way governing the operation and movement of vehicles are hereby extended to all streets, alleys and rights-of-way within the subdivision. All such streets, roads, alleys, and rights-of-way shall henceforth be governed and controlled by all traffic laws set forth in state law and City ordinance.

(a) The City may erect, place, replace, maintain and/or remove such traffic control signs, signals and devices that may be necessary or appropriate in the application and extension of traffic rules and regulations to the subdivision. If the City is so required, all costs of erection, placement, replacement, maintenance and removal shall be reimbursed by the Association to the City within thirty (30) days of such invoice. This reimbursement requirement shall include, but not be limited, to the acquisition of property for sign placement.

ix. Failure to Maintain

Should the Association fail to maintain part or all of the Common Areas to City specifications for an unreasonable time, not to exceed ninety (90) days after written request to do so, then the City shall have the same right, power and authority to enforce the Association's rules and to levy assessments necessary to maintain the private streets and Common Areas. The City, in

its sole discretion, may elect to exercise the rights and powers of the Association, or to take any action required and levy any assessment that the Association might have taken, either in the name of the Association or otherwise, to cover the cost of maintenance (or the possible demolition, if such becomes necessary to preserve public safety or to ease maintenance burden) of any Common Areas. It is in the City's sole discretion as to whether to take such action. Any expenses incurred by the City in taking this action shall be borne by the Association and the City shall be repaid for such expenses incurred.

(a) The City is not responsible for enforcing protective covenants or deed restrictions.

x. Protective Covenants

Protective covenants shall be developed which, among other things, shall make the Association responsible for:

(a) The maintenance and operation of all Common Areas;
(b) The enforcement of all other covenants;
(c) The administration of architectural controls (optional); and
(d) Certain specified exterior maintenance of exterior improvements of individual properties (optional).

xi. The City may require the Association to provide ongoing reporting of budgetary actions, financial reports, and collection activity on homeowners' assessments. Should the funding of the Common Areas maintenance not support the level of maintenance required by applicable ordinance, the City may require additional security for the provision of such maintenance.

xii. The Association may not be dissolved without the prior written consent of the City Council.

xiii. No portion of the Association documents pertaining to the maintenance of private streets and alleys or other Common Areas, and assessments therefore, may be amended without the written consent of the City Council.

xiv. The Association and its members agree to release, indemnify, defend and hold harmless the City, its officers, agents licensees, servants, contractors and/or employees ("Indemnitees"), from and against any and all claims or suits for property damage or loss and/or personal injury of whatever kind or character arising out of or in connection with, directly or indirectly: (a) the reasonable use of the private streets, emergency access, utility easements, entrance gate or structures by the Indemnitees; (b) the condition of the private streets, private entrance gates or structures, private walls and fences, private pedestrian access, private storm drainage systems and emergency access; or (c) any use of the addition by the Indemnitees for any purpose stated hereinabove, whether or not caused, in whole or in part, by the alleged negligence of the Indemnitees. The Association shall be responsible for carrying liability insurance to meet the requirements of this paragraph.

xv. All conflicting ordinances of the City are hereby repealed and all other provisions not in conflict with the provisions of this ordinance shall remain in full force and effect.

xvi. Should any article, paragraph, subdivision, clause or provision of this ordinance, or the ordinances of the City, as hereby amended, be adjudged or held invalid or unconstitutional for any reason, such judgment or holding shall not affect the validity of this ordinance as a whole or any part

or provision hereof other than the part so declared to be invalid or unconstitutional.

7.4. INTERSECTION DESIGN

Intersections shall be designed to balance safe and direct connections for vehicles and pedestrians.

A. ALIGNMENT

1. Intersections shall be either aligned directly, or off-set at least 150'.
2. Except for the intersection of two or more Local streets, only intersections of two streets shall be permitted. All intersections shall be as near to 90 degree angles as practical, and shall always be between 80 degrees and 100 degrees.

B. CURB RADII

In order to minimize crossing distances for pedestrians and limit high-speed vehicle turning movements, curb radii shall limited to the greatest extent possible considering the appropriate balance of pedestrian and vehicle needs. In general, curb radii at intersections shall be as specified in Table 3-8:

TABLE 3-8 : INTERSECTION CURB RADII

INTERSECTION TYPE	RADII*
LOCAL / LOCAL	25'
LOCAL / COLLECTOR	25'
LOCAL / ARTERIAL	25'
COLLECTOR / COLLECTOR	35'
COLLECTOR / ARTERIAL	35'
ARTERIAL / ARTERIAL	35'

* The required turning radiums of a fire apparatus access road shall be 35 feet inside. Where this requirement may be impractical or prohibitive, it may be waived by the fire code official. In such cases, areas where slower vehicle speeds are desired or high pedestrian traffic is expected, the Planning and Zoning Commission and Council may allow smaller turning radii. In areas where large vehicles will make frequent turning movements, the Planning and Zoning Commission and Council may require greater turning radii. The Planning Commission and Council requirement shall be based on the advice of the Public Works Department and upon consideration of all design solutions that effectively balance the interests of all users of the street. Actual centerline turning movements of typical vehicles, lane locations, intersection angles, or other geometric configurations of the specific intersection may be justifications for larger or smaller requirements.

C. PEDESTRIAN CROSSINGS

1. Curb ramps meeting TDLR accessibility standards shall provide a direct, non-diverted approach from the sidewalk along the block, into the pedestrian crossing area.
2. Pedestrian crossings of a Collector street classification or higher shall have a crosswalk differentiated from the finished street surface by any combination of textured or

colored paving, decorative pavers, paint, or other alternative material subject to approval by the City Manager.

3. The Planning and Zoning Commission or Council may require cross walks at mid-block locations for any block face that exceeds 600 feet.
4. Where pedestrian facilities cross multi-lane streets in high-pedestrian areas, the Planning and Zoning Commission or Council may require curb extensions at the intersection to shorten pedestrian crossings and define on-street parking areas, or center pedestrian refuge islands where applicable.

D. INTERSECTION VISIBILITY

Proper lines of sight shall be maintained at all intersections. Traffic on lower classification streets shall stop or yield at intersections with equal or higher classification streets. The proper line of sight shall be an unobstructed view from the stopping point to all points three feet above the centerline of the intersected street for a distance based on that streets design speed. Table 3-9 provides the clear distances.

TABLE 3-9: INTERSECTION SIGHT DISTANCES

DESIGN SPEED OF INTERSECTING STREET (MPH)	INTERSECTION SIGHT DISTANCE (MEASURED IN FEET ALONG THE CENTERLINE OF INTERSECTING STREET)
20	125
25	150
30	200
35	225
40	275
45	325

* Source: American Association of State Highway and Transportation Officials, A Policy of Geometric Design of Highways and Streets (AASHTO 1990)

7.5. WATER AND SEWER

A. GENERAL REQUIREMENTS FOR WATER SYSTEMS

1. Service Required

Each lot within a new subdivision within the corporate limits of the City shall be provided with domestic water service from the City of Boerne Water System. Each lot within a subdivision outside the corporate limits of the City, but within the limits of the City's extraterritorial jurisdiction, shall be provided with domestic water service from a community water system meeting the design requirements of the Texas Commission on Environmental Quality (TCEQ) or may be served by an individual private well that is permitted and approved by Cow Creek Groundwater District. The water distribution system required under this section shall include all pumping station production facilities, elevated storage tanks, fire hydrants and other appurtenances required to adequately serve the area being subdivided.

The water system improvements required under this section shall include the extension of existing water mains (including the installation of new fire hydrants) across the entire length (frontage) of all newly established lots adjacent to a public

right of way and/or to the perimeter of the subdivision for future extension into undeveloped areas, or for connections to the systems in adjoining developed areas.

2. Obligations of Subdivider

Within the perimeter of the subdivision, the subdivider shall install, at his/her own cost and expense, all necessary lift stations, booster pumps, mains and appurtenances, including, but not limited to, valves, manholes and fire hydrants. The subdivider shall provide all water lines necessary to properly serve each lot of the subdivision and to insure that existing and/or new water facilities can supply the required demand for domestic use and for fire protection at the desired pressure. The subdivider shall install all mains and shall extend the service to all lots terminating thereon with a curb stop and meter box. The subdivider shall submit a certificate to the City Manager certifying that the system has been designed in accordance with the requirements of the State Health Department, rules of the Texas Insurance Commission and this ordinance.

B. WATER SYSTEM DESIGN STANDARDS

All water production and distribution facilities shall be designed and sized to meet the minimum design standards in the following table.

TABLE 7-1: WATER SYSTEM MINIMUM DESIGN STANDARDS	
Demand Assumptions	
Population Equivalent	2.7 persons per residential unit
Average Daily Demand	160 gallons per capita per day
Peak Daily Demand	2 times average daily demand (= 320 gallons per capita per day)
Peak Hour Flow Rate	3.5 x average hourly rate (= 560 gallons per capita per day)
Supply Requirements	
Service Capacity	Peak Daily Demand
High Service Pumps	Peak Hour Demand plus fire flow
Storage Requirements	
Ground Storage	One day of storage (160 gallons per capita)
Elevated Storage	Top 20' = 40 gallons per capita Top 40' = 4 hours of maximum fire flow + average demand

C. WATER MAINS

1. General Specifications

   Piping for water mains and connections shall be in accordance with the City of Boerne Standard Specifications for Public Works Construction.

2. Minimum Diameter

   Water mains smaller than eight inches shall not be permitted, except that water mains less than 600 feet long and located solely in residential areas may be six inches in diameter. No more than one fire hydrant shall be installed on any 6-inch water main.

3. Maximum Length

   In all areas, water mains shall be the shorter of either 3,000 feet or that length which would by fluid friction render the main incapable of producing flows and pressures set out in this ordinance for the type of area to be served.

4. Looping Requirements

   In all areas, water mains shall be looped between water mains whose inside diameter is eight inches or larger, except dead end mains in cul-de-sacs up to 600 ft. shall be allowed.

5. Location

   a. All water mains shall be located in dedicated streets or fire lanes, or in the community open space in a planned unit development or cottage development.
   b. On streets with curbs and sidewalks, all water mains shall be located in the public right-of-way between the curb and the sidewalk.

6. Minimum Flow Requirements

   a. Water mains in principal mercantile and industrial areas shall be sized so that the minimum fire flow from any single fire hydrant shall be not less than 3,000 gallons per minute with 20 psig residual pressure.
   b. Water mains in light mercantile areas shall be sized so that the minimum fire flows from any single fire hydrant shall be not less than 1,500 gallons per minute with 20 psig residual pressure.
   c. Water mains in residential areas shall be sized so that the minimum fire flow at any single fire hydrant shall not be less than 750 gallons per minute with 20 psig residual pressure and a domestic use of 2 gpm for every lot in the subdivision.

7. Valve Locations

   a. The distribution system shall be equipped with a sufficient number of valves and the valves shall be so located that no case of accident, breakage or repair to the water distribution system mains will necessitate shutting from service a length of water main greater than either one side of a single block or a maximum of 500 feet.
   b. A minimum of 2 valves are required at all tees and 3 valves at all crosses.

8. Service Lines

   The minimum sizes of service lines that shall be used are as required in the following table.

TABLE7-2: MINIMUM WATER SERVICE LINE SIZES	
Number of Dwelling Units	Service Line Size (inches)
1	3/4
2	1
3 - 4	1 1/2
5 - 10	2
11 - 50	4
51 - 80	6
More than 80	8

D. FIRE HYDRANTS

1. General Requirements

   a. All fire hydrants shall have a six-foot clear horizontal radius of 360 degrees around the fire hydrant free from obstructions.
   b. All fire hydrants shall be located on street corners or side property lines so as to be readily accessible at all times.
   c. All fire hydrants shall be equipped with at least a 6 inch valve located on the hydrant lead and the valve and hydrant shall be mechanically anchored to the main.

2. Maximum Spacing

   a. Every building in the City limits shall be within 500 feet of a standard City fire hydrant.
   b. In mercantile and industrial areas, hydrants shall be located so that there will be at least one hydrant every 300 feet average as measured along dedicated streets.
   c. In light mercantile areas containing apartment houses, hydrants shall be located in dedicated streets or fire lanes behind curbs and be spaced not more than 300 feet hose lay from any building within the district, each distance to be measured down any standard fire hose laid from the fire hydrant to the building.
   d. In residential areas, hydrants shall be located so that there will be a fire hydrant every 500 feet average distance as measured along dedicated streets, including dedicated easements and fire lanes in mobile home parks and travel trailer parks.

E. SANITARY SEWERS

1. General Requirements

   a. Every subdivision shall be provided with a sewage disposal system meeting the design requirements of the Texas Commission on Environmental Quality and approved by the City Manager.

b. Sanitary sewers shall be connected to serve each lot in the subdivision unless the Planning and Zoning Commission determines that such connection would require an unreasonable expenditure of funds when compared with other methods of sewage disposal or unless the subdivision meets the requirements of Section 6 of this Article.
c. Where connection to the sewer system is not to be made immediately, plans shall be prepared for installation of a sewage collection system to serve each lot, and those parts of such system which will lie in the portion of streets intended for vehicular traffic shall be installed before the street is paved.
d. The sewage collection and disposal systems required under this section shall include all lift stations, force mains, treatment facilities and appurtenances required to adequately serve the area being subdivided.
e. The sewage collection and disposal systems improvements required under this section shall include the extension of sanitary sewer mains to the boundaries of the subdivision as required to provide for the future extension of the systems into adjoining undeveloped areas or for connection to the systems in adjoining developed areas.
f. No variance shall be granted to this section without the provision of permanent utility easements and temporary construction easements for the future extension of said improvements.
g. The easement widths and location shall be determined by the City.

2. Obligations of Subdivider

a. The subdivider shall install all sanitary sewer mains and lines to serve each lot.
b. If the public sewer system is not within 1,200 feet of the subdivision, those portions of the system which lie under paved areas shall be installed and capped off and temporary waste treatment shall be provided in accordance with the requirements of state health officials.
c. The subdivider shall submit a certificate to the City Manager certifying that the sewer system has been approved by the Texas Commission on Environmental Quality.

F. ON-SITE SEWAGE FACILITIES

1. General Requirements

a. When specifically authorized by the Planning and Zoning Commission, on-site sewage facilities in the city limits may be utilized for wastewater disposal.
b. All lots in the subdivision which utilize private wells and on-site sewage facilities shall obtain approval from and adhere to the regulations provided by Cow Creek Groundwater District and TCEQ (Texas Commission on Environmental Quality).
c. Lots in subdivisions being served with water provided by a public or other community water system may utilize individual on-site sewage facilities provided all lots within the subdivision have a minimum area of 45,000 square feet unless the water system is providing water from a source that is outside the jurisdiction of the Cow Creek Underground water District then the standards set forth in Section 3.04.003.B shall be followed.
d. On-site sewage facilities shall be installed on each lot concurrent with any development thereon and the design of such system and the method of installation shall conform in all respects to the requirements of the Kendall County Office of Development Management.

G. WASTEWATER SYSTEM DESIGN STANDARDS

1. General Design Standards

a. All wastewater collection system improvements shall be designed and sized to meet the minimum design standards in the following table.

TABLE 7-3: WASTEWATER SYSTEM MINIMUM DESIGN STANDARDS	
Demand Assumptions	
Population Equivalent	3 persons per residential unit
Average Daily Flow	100 gallons per capita per day
Peak Daily Flow	3.25 times average daily flow
Infiltration Factor	500 gallons per gross acre per day
Average Capacity Requirements	
Single Family Residential	300 gallons per lot per day
Multi-Family Residential	7,500 gallons per acre per day
Commercial	1,500 gallons per acre per day

b. All sewers shall be sized to accommodate the maximum peak flow plus infiltration flows which will render the pipe flowing no greater than three-fourths full.
c. Minimum slope shall be according to current Texas Commission on Environmental Quality rules and regulations and sewerage design standards.

2. Sewer Location

a. All sewer mains are to be located in the right-of-way as designated by the City Manager.
b. Separation distances between sewer mains or laterals and potable waterlines shall be in accordance with regulations of the Texas Commission on Environmental Quality.

3. Materials

Materials shall be in accordance with the City of Boerne Standard Specifications for Public Works Construction.

4. Trenching

Sewers shall be constructed according to City standard specifications as to trenching, bedding, backfill and compaction.

5. Minimum Diameter of Mains

Eight inch diameter pipe shall be the minimum acceptable for sewer mains and lines, except that a sewer main less than 600 feet long may be six inches in diameter if located on a cul-de-sac or an existing dead end street within a residential subdivision.

6. Manholes

Manholes shall be spaced not more than 400 feet apart and shall be constructed in accordance with City standard specifications.

7. Lift Stations and Force Mains

a. Lift station capacity shall be no less than 100 gallons per minute per pump.
b. Lift station force mains shall be designed and sized to produce a complete exchange of wastewater every other cycle of the pumps.
c. Force mains and fittings shall be epoxy lined ductile iron, Polyethylene or PVC pipe, pressure class 150, minimum.
d. The pipe shall have either mechanical joints or rubber gasket joints as approved by the City Manager.
e. The minimum force main size shall be four inches.
f. Lift stations shall be enclosed, for noise and odor control, in a building that matches the general architecture of the subdivision.

8. Minimum Diameter of Service Lines

Service lines serving individual lots shall be no smaller than 6 inches in diameter.

7.6. DRAINAGE

A. GENERAL REQUIREMENTS

1. Specific Intent

It is the Specific Intent of this Section to:

a. Preserve and protect sensitive natural areas that serve an ecological function in minimizing flood damage.
b. Create a priority for maintaining natural drainage systems wherever possible, and emphasize the design and arrangement of storm water facilities as community amenities, appropriate to the planning context.
c. Minimize the amount of impervious surfaces directly connected to storm water systems, and reduce the amount of flow, speed of flow and level of contaminants entering both natural and manmade storm water systems.
d. Allow flexibility in site designs and cooperation among adjacent development sites, to allow the most efficient development of sites and encourage individual designs that support a more regional or watershed-based storm water solutions.
e. Integrate high-performance flood protection and storm water systems into the open space system.
f. Encourage creative design solutions that allow areas to perform multiple functions in terms of storm water management, flood protection, open space and recreation, landscape and urban design, or other site development support functions.

2. Facilities Required

The subdivider shall provide an adequate storm drainage system to protect each lot throughout the subdivision from flooding. These drainage facilities may consist of a combination of natural features, swales, watercourse improvements, bridges and culverts, enclosed storm sewers and other man-made improvements to carry off stormwater within the subdivision. The drainage system shall use detention ponds, retention ponds and siltation ponds, individually or in concert, to control runoff and to protect downstream properties from any increase in flooding originating from the subdivision. The system shall be integrated with the overall drainage system of the city, and the design of the system must be approved by the City Manager in accordance with the requirements of this ordinance.

3. Stormwater Management

Stormwater management facilities shall be provided prior to site construction or clearing, where design is required at the time of platting.

a. Stormwater management shall be designed and constructed to prevent adverse conditions from arising on property adjoining and downstream of the subdivision site. Adverse conditions include increases in peak flows, water surface elevations and flow velocity. The applicant shall provide a drainage report that shows mitigation of the impacts of development on the existing downstream drainage system. Mitigation may include detention, retention, infiltration, channel improvements, and other means acceptable to the City Manager. Stormwater Management facilities shall be designed to reduce post-development peak flow rates of discharge to pre-development rates for the 2, 5, 10, 25, 50 and 100-year storm events at all points of discharge. The drainage report shall also include an evaluation of downstream conditions.
b. Waiver of Stormwater Management requirements in certain circumstances

The Planning and Zoning Commission, after considering a report from City staff, may waive the Stormwater Management requirements as outlined in Section 6.01.002, Facilities Required and approve a subdivision of land that is located within the city limits as depicted on the 2010 Flood Insurance Rate map, Community Panel No. 480418, effective date of December 17, 2010, and which is seven (7) residential lots or less or fewer than 1.5 acres.

1. Construction Sequencing and Erosion Controls

The final construction plans required by Article 8 shall be accompanied by a comprehensive and detailed report and plan for the control of erosion and sedimentation. The report shall include a construction sequencing plan which details the proposed placement, maintenance and removal of temporary erosion controls, the slope stabilization techniques which are to be employed and the restoration measures, including vegetative types, which are to be employed as part of the process of subdivision development. The plan shall list and show the location of temporary erosion controls, show the physical details of the controls, and include a construction sequencing list which will govern the timing of the use of various controls in relation to distinct steps in subdivision construction.

2. Land Clearing Restrictions

No clear-cutting or rough-cutting of land shall be permitted unless approved by a construction sequencing and erosion control plan provided in subsection 6.01.004, except for the limited clearing and rough-cutting which is necessary for soil testing and surveying as required by this ordinance. No other clearing or rough-cutting shall be permitted except as necessary for construction of temporary erosion and sedimentation controls until these controls are in place and approved by the City Manager. Areas to be cleared for temporary storage of spoil or construction equipment, or for the permanent disposal of fill material or spoils, shall be shown on preliminary plat. The natural vegetation within any water supply protection zone which is required by Section 6 B of this Article shall not be disturbed except for purposes consistent with the ultimate use of the land in that zone.

3. Enforcement of Erosion Controls and Clearing Restrictions

If a subdivider does not comply fully with an approved erosion control and construction sequencing plan, or violates the restrictions on land clearance in the preceding subsection, the City Manager shall notify the subdivider in writing that the City may correct the violation and revegetate the disturbed area at the subdivider's expense unless, within 30 days after the date of the notice, the subdivider complies, corrects the violation, provides the required erosion and sedimentation controls and provides continuing maintenance thereof acceptable to the City Manager.

B. DRAINAGE STUDY REQUIRED

1. Drainage Study Contents

The subdivider shall submit a drainage study with the final construction plans for residential subdivisions, and wherever stormwater flow management facilities shall be regional and dedicated to the public. The required drainage studies in commercial subdivisions where facilities are site-specific and privately maintained may be submitted with building permit construction documents for each lot.

2. Downstream Drainage Assessment

a. A downstream drainage assessment shall extend from the outfall of the subdivision to a point downstream, determined by one of two methods:

   i. *Zone of Influence* – Point downstream where the discharge from a proposed development no longer has a significant impact upon the receiving stream or storm drainage system
   ii. *Adequate Outfall* – Location of acceptable outfall that does not create adverse flooding or erosion conditions downstream

b. These methods recognize the fact that a structural control providing detention has a "zone of influence" downstream where its effectiveness can be felt. Beyond this zone of influence the storm water effects of a structural control become relatively small and insignificant compared to the runoff from the total drainage area at that point. Based on studies and master planning results for a large number of sites, a general rule of thumb is that the zone of influence can be considered to be the point where the drainage area controlled by the detention or storage facility comprises 10% of the total drainage area. This is known as the *10% Rule*. As an example, if a structural control drains 10 acres, the zone of influence ends at the point where the total drainage area is 100 acres or greater.

C. DRAINAGE EASEMENTS

1. General Requirements

Natural waterways and channels should be used wherever practical to carry runoff. Any modifications to existing waterways and channels must be approved by the City Manager. Where a subdivision is traversed by a watercourse, drainageway, natural channel or stream, an easement or right-of-way shall be provided conforming substantially to the 100-year floodway or channel limits of such watercourse, plus additional width to accommodate future needs.

2. Enclosed Systems

Storm drainage easements shall be provided for existing and proposed enclosed drainage systems. Easements shall be centered on the systems. The easement width shall be based on the following formula: $W = 5' + 2H + D$

W is the width of the easement

H is the depth of soil cover over the pipe or box structure D
is the diameter or width of pipe or box structure

3. Open Channels

Storm drainage easements along proposed or existing open channels shall provide sufficient width for the required channel and such additional width as may be required to provide ingress and egress of maintenance equipment; to provide clearance from fences and space for utility poles; to allow maintenance of the channel bank; and to provide adequate slopes necessary along the bank.

The minimum easement width shall be the width of the channel plus 15 feet on one side (20 feet with utilities) and 2 feet on the opposite side unless approved by the City manager. The channel top width is determined by the locations where the channel side slopes intersect with adjacent grade with cross slopes less than 10 percent.

4. Overflow Drainage

Storm drainage easements shall be provided for emergency overflow drainage ways of sufficient width to contain within the easement storm water resulting from a 100-year frequency storm less the amount of storm water carried in an enclosed system.

D. DRAINAGE SYSTEM DESIGN STANDARDS

1. General Requirements

Drainage facilities shall be provided and constructed as specified by the City Manager in accordance with the City Drainage Design Standards and Construction Specifications.

2. Method of Computing Runoff

The method of computing runoff shall be the Rational Method for watersheds of 200 acres or less in area and with time of concentration of 60 minutes or less. For watersheds with an area greater than 200 acres or time of concentration greater than 60 minutes, a computer model acceptable to the City Manager or a hydrograph method as shown in the Texas Department of Transportation (TXDOT) Hydraulic Design Manual (HDM) shall be prepared. Also when designing detention facilities or determining downstream impacts, a similar approach shall be used. In all cases, normal antecedent conditions shall be assumed unless otherwise determined by the City Manager.

a. Rational Method

The following parameters shall be used for runoff calculations by the Rational Method.

i. The Rational Method shall use the following formula:

9. $$Q = CC_f IA$$

Where:

Q = the flow at the discharge of the watershed, cubic feet per second (cfs).

C = the runoff coefficient, dimensionless, from table 6-1 or table 6-2

C_f = runoff coefficient adjustment factor from table 6-3.

I = rainfall intensity, inches per hour, from figure 6-1.

A = watershed area, acres.

ii. Runoff coefficients may be calculated based on specific land use established by the Zoning Districts according to Table 6-1 below, or
iii. A composite runoff coefficient based on the percentages of different types of surfaces in the drainage area according to Table 6-2 below.
iv. Runoff coefficients given in Table 6-1 and Table 6-2 are valid for storms up to and including the 10year storm. Use the adjustment factor in Table 6-3 for other storm frequencies.

TABLE6-1: RATIONAL METHOD RUNOFF COEFFICIENTS BY ZONING DISTRICT				
Zoning District	**Average Impervious Cover (%)**	**Slope**		
		Up to 2%	**Over 2% & Up to 7%**	**Over 7%**
RA Single Family Residential-Agricultural	10	0.31	0.40	0.44
RMA Single Family Residential-Manor Lots	25	0.40	0.47	0.51
RE Single Family Residential – Estate	30	0.42	0.49	0.53
RE1 Low Density Single Family Residential	35	0.45	0.52	0.55
R1 Medium Density Single Family Residential	40	0.48	0.54	0.57
RN1 Neighborhood Residential	45	0.51	0.57	0.59
R2 Moderate Density Residential	50	0.54	0.59	0.62
R3 High Density Residential	60	0.60	0.64	0.66
R-4 Multi-family Residential	65	0.63	0.66	0.68
RMO Modular Residential	55	0.57	0.61	0.64
O Office	70	0.66	0.69	0.70
B1 High Density Residential & Neighborhood Commercial	80	0.71	0.73	0.74
MU1 Mixed Use District	75	0.69	0.71	0.72
B2 Highway Commercial	85	0.74	0.76	0.77
B2R Highway Commercial (Restricted)	80	0.71	0.73	0.74
MU2 Mixed Use District	75	0.69	0.71	0.72
B3 Central Business	92	0.78	0.79	0.80
RC River Corridor	90	0.77	0.78	0.79
I Industrial	95	0.80	0.81	0.81
MHC Manufactured Home Community	55	0.57	0.61	0.64

Note: Average expected impervious cover is indicated, if impervious cover of development will differ because of overlay zoning or other conditions, alternative factors may be used when justified to the satisfaction of the City Manager in the drainage report.

TABLE 6-2: RATIONAL METHOD RUNOFF COEFFICIENTS FOR COMPOSITE ANALYSIS	
Character of Surface	**C**
Developed Areas	
Asphaltic	0.81
Concrete or Roof	0.83
Planted – Poor Condition (grass cover on less than 50% of the area)	
Less than 2% Slope	0.37
2 – 7% Slope	0.43
More than 7% Slope	0.45
Planted – Fair Condition (grass cover on 50% to 75% of the area)	
Less than 2% Slope	0.30
2 – 7% Slope	0.38
More than 7% Slope	0.42
Planted – Good Condition (grass cover on more than 75% of the area)	
Less than 2% Slope	0.25
2 – 7% Slope	0.35
More than 7% Slope	0.40
Undeveloped Areas	
Cultivated Land	
Less than 2% Slope	0.36
2 – 7% Slope	0.41
More than 7% Slope	0.44
Pasture or Range Land	
Less than 2% Slope	0.30
2 – 7% Slope	0.38
More than 7% Slope	0.42
Forest or Wooded Land	
Less than 2% Slope	0.28
2 – 7% Slope	0.36
More than 7% Slope	0.41

TABLE 6-3: RUNOFF COEFFICIENT ADJUSTMENT FACTORS FOR RATIONAL METHOD	
Storm Frequency (years)	C_f
25	1.1
50	1.2
100	1.25

Note: Use C_f = *1 for 10-year form frequency or less.*

v. Rainfall intensity shall be calculated as function of the time of concentration. The time of concentration shall be calculated based on its component parts and summed to determine the total time of concentration. Flow shall be assumed to begin as sheet flow, develop into shallow concentrated flow until the flow enters a drainage system where it becomes pipe flow or channel flow. Sheet flow shall not exceed a length of 300 feet. Shallow concentrated flow shall be the total between the end of the sheet flow and the beginning of a drainage system. The following equations may be used to calculate travel time for sheet flow and shallow concentrated flow, respectively:

$$T_{Sheet} = \frac{Ln}{42S^{0.5}}$$

$$T_{Shallow} = \frac{Ln}{60S^{0.5}}$$

Where:

T_{Sheet} = Sheet flow travel time, minutes.
$T_{Shallow}$ = Shallow concentrated flow travel time, minutes.
L = Flow length, feet, maximum 300 feet for sheet flow.
N = Manning's roughness coefficient from Table 6-4.
S = Slope of ground, ft/ft.

Where hydraulic calculations can be performed to calculate the velocity in the drainage system, the calculated velocity shall be used to determine the time of concentration in the drainage system. In other cases use Manning's equation with the roughness coefficients given below to calculate the velocity in the drainage system.

TABLE 6-4: MANNING'S ROUGHNESS COEFFICIENTS FOR SHEET FLOW AND SHALLOW CONCENTRATED FLOW

Manning's "n"	Condition
0.016	Concrete (rough or smoothed finish)
0.02	Asphalt
0.1	0-50% vegetated ground cover, remaining bare soil or rock outcrops, minimum brush or tree cover
0.2	50-90% vegetated ground cover, remaining bare soil or rock outcrops, minimum- medium brush or tree cover
0.3	100% vegetated ground cover, medium- dense grasses (lawns, grassy fields etc.) medium brush or tree cover
0.6	100% vegetated ground cover with areas of heavy vegetation (parks, green- belts, riparian areas etc.) dense under- growth with medium to heavy tree growth

Use the total calculated time of concentration as the duration to determine the critical rainfall intensity from Figure 6-1. Use a minimum time of concentration of 5 minutes.

7.7. RECLAIMED WATER

A. GENERAL REQUIREMENTS FOR RECLAIMED WATER SYSTEMS

1. Service Requirements

   New subdivisions or platted properties within the corporate limits of the City or within the limits of the City's extraterritorial jurisdiction may request reclaimed water service from the City of Boerne Reclaimed Water System. In the event the City approves the request, the Subdivider shall provide reclaimed water system improvements. System improvements shall include the extension of reclaimed water mains, design and installation of distribution system within property and all required appurtenances. The City may require the extension of lines across the entire length (frontage) of all newly established lots adjacent to a public right of way and/or to the perimeter of the subdivision for future extension into undeveloped areas, or for connections to the systems in adjoining developed areas.

   A reclaimed water master meter or individual service meters are required for the measurement of the quantity of reclaimed water.

2. Provision of Reclaimed Water Service

   a. Upon the Utility Director's recommendation that the provision of Reclaimed Water is feasible, the City Manager may enter into an Agreement for the provision of Reclaimed Water to properties within the City's Reclaimed Water Service Area upon application, and in compliance with this Article and all applicable laws and regulations.
   b. Requests for Reclaimed Water Service from the City must meet all requirements provided in this Article and all minimum design, construction and operation standards for Reclaimed Water systems.
   c. The request for Reclaimed Water Service, must come from the owner or authorized agent of the property for which the service is to be provided.

3. Obligations of the City

   The City and its authorized agents, employees, or contractors are responsible for the operation, management, and control and the oversight of the Reclaimed Water System.

4. Obligations of Subdivider

   Within the proposed Reclaimed Water Service Area, the Subdivider shall install, at their own cost and expense, all necessary booster pumps, mains, valves and appurtenances to properly serve the subdivision as approved by the City.

   Subdivider shall:

   a. Provide an engineering report documenting the existing and/or new reclaimed water facilities can supply the required demand at the desired pressure. Report shall include calculations for proposed system demands.

b. Be responsible for the design and construction of new reclaimed water facilities to proposed service areas in accordance with TCEQ Design Criteria in Chapter 210 and other applicable chapters of the Texas Administrative Code, as amended;
c. Provide construction supervision of work to assure compliance with this Article;
d. Provide access to work during construction for inspections by the City;
e. Train all City operations personnel on any constructed facilities;
f. Submit a certificate to the City Manager certifying that the system has been designed in accordance with the requirements of the Texas Administrative Code and this ordinance. Certificate shall be sealed by a Professional Engineer licensed in the State of Texas.

B. RECLAIMED WATER SYSTEM DESIGN STANDARDS

1. General Specifications

Piping and appurtenances for reclaimed water mains and connections shall meet the minimum criteria as required by the City of Boerne, "Standard Specifications for Public Works Construction" as currently amended.

2. Sizing of Reclaimed Water Mains

All reclaimed water production and distribution facilities shall be designed and sized to meet the minimum design standards and be based on the Subdivider's expected average and peak reclaimed water consumption as identified in the design report. All reclaimed water mains shall be installed at locations designated by the City. Computer modeling is preferred for sizing reclaimed water mains based on Subdivider's expected reclaimed water consumption; however, for reclaimed water mains less than sixteen (16) inches in diameter other engineering calculation methods may be accepted. All reclaimed water mains shall be sized to provide necessary service to the subdivision being developed and per the minimum standards indicated in Table 10-1.

TABLE 10-1: RECLAIMED WATER SYSTEM MINIMUM DESIGN STANDARDS

Demand Assumptions	
Annual Average Irrigation Application Rate	1,987 GPD / Irrigated Acres
Peaking Factors	Summer – 1.37
	Winter – 0.66
Peak Flow Rate	Maximum Summer Irrigation Volume over 14-Hour Period

Subdivider shall specify the total irrigated areas and percent impervious cover in accordance with the land use category. Additional demands for reclaimed water shall be clearly defined in the report. The City may require oversizing of certain mains in accordance with City Ordinance Article 8.

Reclaimed water mains smaller than four (4) inches shall not be permitted.

Maximum static pressure – one-hundred (100) psi unless otherwise approved by the City. If the maximum static pressure exceeds eighty (80) psi, a PRV will be required on the property owner's side of the reclaimed water meter and should be shown on the plan view.

3. Looping Requirements

In all areas, reclaimed water mains shall be looped between reclaimed water mains whose inside diameter is four inches or larger, except dead end mains in cul-de-sacs up to 600 ft shall be allowed.

4. Location

All reclaimed water mains are to be located in the right-of-way as designated by the City Manager.

5. Valve Locations

The distribution system shall be equipped with a sufficient number of valves and the valves shall be so located that no case of accident, breakage or repair to the reclaimed water distribution system mains will necessitate shutting from service a length of reclaimed water main greater than either one side of a single block or a maximum of 500 feet. A minimum of 2 valves are required at all tees and 3 valves at all crosses.

C. PROOF OF RECLAIMED WATER SYSTEM COMPLIANCE

The Subdivider making an application for Reclaimed Water Service shall submit the information as required by Article 8 for the construction plans, inspection, and final acceptance of the reclaimed water system improvements.

7.8. GAS DISTRIBUTION

A. GENERAL REQUIREMENTS FOR GAS DISTRIBUTION

1. Service Requirements

   New subdivisions or platted properties within the corporate limits of the City or within the limits of the City's extraterritorial jurisdiction may request natural gas service from the City of Boerne. In the event the City approves the request, the Subdivider shall provide gas distribution system improvements. System improvements shall include the extension of gas mains, design and installation of distribution system within property and all required appurtenances. The City may require the extension of lines across the entire length (frontage) of all newly established lots adjacent to a public right of way and/or to the perimeter of the subdivision for future extension into undeveloped areas, or for connections to the systems in adjoining developed areas.

2. Provision of Gas Service

   a. Upon the Utility Director's recommendation that the provision of natural gas is feasible, the City Manager may approve the provisions for natural gas to properties within the City's Gas Service Area upon application, and in compliance with this Article and all applicable laws and regulations.
   b. Requests for Natural Gas Service from the City must meet all requirements provided in this Article, the International Fuel Gas Code (IFGC) latest edition, and all minimum design, construction and operation standards for the gas distribution system.
   c. The request for gas service, must come from the owner or authorized agent of the property for which the service is to be provided.

3. Obligations of the City

   The City and its authorized agents, employees, or contractors are responsible for the operation, management, and control and the oversight of the Gas Distribution System.

   The City's standard gas service shall be provided to all customers at 4 ounces per square inch, except that the City may provide gas service at a nonstandard pressure only upon request from the customer and where the customer's facilities in place prior to the effective date of this ordinance are inadequate to properly operate at the City's standard service pressure.

4. Obligations of Subdivider

   Within the proposed Gas Service Area, the Subdivider shall install, at their own cost and expense, all necessary mains, valves and appurtenances to properly serve the subdivision as approved by the City.

   Subdivider shall:

   a. Provide an engineering report documenting the existing and/or new gas system can supply the required demand at the desired pressure.
   b. Be responsible for the design and construction of new gas facilities and service lines to proposed service areas;
   c. Provide construction supervision of work to assure compliance with this Article;
   d. Provide access to work during construction for inspections by the City;
   e. Train all City operations personnel on any constructed facilities;

f. Submit a certificate to the City Manager certifying that the system has been designed in accordance with the requirements of the Title 16 of the Texas Administrative Code and this ordinance. The certificate shall be sealed by a Professional Engineer licensed in the State of Texas.

B. GAS MAIN DESIGN STANDARDS

All natural gas production and distribution facilities shall be designed and sized to meet the minimum design standards in accordance with the projected demand load provided by the Subdivider and approved by the City.

1. General Specifications

Piping and appurtenances for gas systems and services shall meet the minimum criteria as required by the City of Boerne, "Standard Specifications for Public Works Construction" as currently amended. All materials that will become a permanent part of the gas distribution system must be approved by the City with written assurance that minimum requirements are being satisfied for the selection and qualification as established by Federal and State Regulations. All components used in the construction of a gas pipeline and related facilities must be to withstand operating pressures and temperatures without impairment.

2. Sizing of Natural Gas Mains

a. All natural gas mains shall be installed in accordance with this article or as required by the City. All natural gas mains shall be sized to provide necessary service to the subdivision being developed with the minimum diameter being 1 inch.
b. The City's standard pipe diameters for providing gas services are 1 and 2 inches. The City shall determine the appropriate service size after consideration of service requirement information provided by the Applicant or Customer.
c. The maximum gas pressure provided to a Customer shall be 2 psi, unless authorized by the City.
d. The City may require oversizing of certain mains in accordance with City Ordinance Article 8.

3. Looping Requirements

In all areas, natural gas mains shall be looped between natural gas mains, except dead end mains in cul-de-sacs up to 600 ft. shall be allowed.

4. Location

All natural gas mains are to be located in the right-of-way as designated by the City Manager.

5. Valve Locations

The distribution system shall be equipped with a sufficient number of valves and the valves shall be so located that no case of accident, breakage or repair to the gas distribution system mains will necessitate shutting from service a length of gas main greater than either one side of a single block or a maximum of 500 feet. A minimum of 2 valves are required at all tees and 3 valves at all crosses.

The City reserves the right to specify additional valves or less spacing between valves as necessary to reduce the time to shut down a section of pipeline in an emergency. Spacing determined by size of pipe, operating pressures, and local conditions.

6. Gas Service Stubs

Stubs for future Customers may be installed when installing gas main. Stubs will be sized for anticipated usage and should terminate 1 foot inside the property line or 1 inch past electric utility easement if applicable. Service stubs may cross beneath streets and sidewalks and can be installed to serve residential lots on either side of a street. Each service shall be provided its own tap off of the distribution main.

C. GAS SYSTEM COMPLIANCE

1. Proof of Compliance with the Minimum Design and Operation Standards

The subdivider making an application for Gas Service shall submit the information as required by Article 8 for the construction plans, inspection, and final acceptance of the gas system improvements.

7.9. UTILITY EXTENSIONS AND OBLIGATIONS

A. OBLIGATIONS OF SUBDIVIDER

1. The subdivider shall install at his/her own cost and expense all of the improvements required by this ordinance. It shall be the subdividers responsibility to ensure that all improvements are constructed in accordance with this ordinance, City of Boerne Standard Specifications for Public Construction, the approved final design plans and all applicable regulatory rules and regulations. The subdivider shall comply with all other provisions of this ordinance prior to acceptance of the subdivision by the City.

B. ENGINEER RESPONSIBLE

1. The subdivider shall retain the services of a licensed professional engineer, licensed in the State of Texas, whose seal shall be placed on each sheet of the construction plans, and who shall be responsible for the design and supervision of all public infrastructure improvements constructed for the subdivision.

C. INSTALLATION OF UTILITIES BEFORE PAVING

1. Unless the subdivider shall have received prior written permission to the contrary from the City Manager, all utilities must be installed prior to the paving of a street or alley or portion thereof.

D. INSPECTION OF IMPROVEMENTS

1. The City Manager shall from time to time inspect the construction of all utility facilities, drainage infrastructure, and streets in the subdivision during the course of construction to see that they comply with the standards governing them.
2. In this regard, free access to the subdivision shall be accorded the City Manager by the subdivider and the subdivider's agents and employees.

E. COST OF UTILITY EXTENSIONS

1. Water and Sewer Main Extensions

    a. The subdivider shall install water and sewer mains from their present locations to the boundaries of the subdivision at his/her own cost and expense, subject to the provisions of this ordinance.

2. Reclaimed Water Main Extensions

    a. The subdivider shall either (a) reimburse the City for the cost of extension of the reclaimed water distribution system from their present locations to the perimeter of the subdivision or (b), with the City Manager's approval, extend the distribution system at the subdivider's own expense.

3. Electric Distribution System and Gas Main Extensions

    a. The subdivider shall either (a) reimburse the City for the cost of extension of the electrical primary distribution system and/or the natural gas mains from their present locations to the perimeter of the subdivision or (b), with the City Manager's approval, extend the electric distribution system and/or gas mains at the subdivider's own expense.

4. Electric and Gas Systems within the Subdivision

    a. The subdivider shall reimburse the City for the cost of installation of the electrical primary distribution system and the natural gas distribution system within the perimeter of the subdivision, including the installation of required street lights and services to any required lift stations, booster pumps, and similar facilities.
    b. The electrical primary distribution system and natural gas distribution system extensions required under this section shall include the extension of the utilities to the boundaries of the subdivision as required by the City to provide for the future extension of the systems into adjoining unsubdivided areas or for connection to the systems in adjoining developed areas.

5. Lift Stations, Booster Pumps and Related Equipment

    In the event that it is determined that installation of equipment or appurtenances such as lift stations, booster pumps, or similar facilities is necessary in the area between the existing utility mains and the perimeter of a subdivision, the City Council shall, taking all circumstances into consideration, determine who shall bear the cost of such necessary equipment and appurtenances, and in what proportion each party shall be liable.

6. Waiver of Costs for Industrial Parks and Commercial Developments.

    The requirements of subsections 8.03.001 and 8.03.002 of this Section, for the subdivider to install water and sewer mains from their present locations to the perimeter of the subdivision at his/her own cost and expense, and either to reimburse the City for the cost of electrical primary distribution system extensions and natural gas main extensions from their present locations to the perimeter of the subdivision or to extend these systems at his/her own expense, may be waived by the City Council for proposed industrial parks and commercial developments. Such waiver shall be at the discretion of the Council after taking into consideration all the circumstances including, but not limited to, the following:

    a. The ratio of the potential tax revenues and utility system revenues from property within the industrial park or commercial development to the costs to the City of extending water, gas and sewer mains and electric primary distribution lines to the proposed industrial park or commercial development.
    b. The availability of funds for the extension of such mains and distribution lines.
    c. The contribution, if any, by the subdivider for the extension of the mains and distribution lines.

F. COST DISTRIBUTION FOR OVERSIZED FACILITIES

1. In the event that the Planning and Zoning Commission, City Manager or his designee deems it necessary and prudent to require lift stations, booster pumps, mains, equipment, streets and/or appurtenances which are larger or whose capacities are in excess of those which are usual, customary and necessary to meet the needs and requirements of a particular subdivision, then the Planning and Zoning Commission or City Manager may recommend to the City Council and the Council may determine that the City shall pay to the subdivider the difference in cost (including construction and installation) between those lift stations, booster pumps, mains, equipment, streets and/or appurtenances which the City requires the subdivider to install, and the cost of like equipment of the size and/or capacity which would have adequately met and served the needs of the subdivision.

2. Providing that funds are available, the City may also participate in the extra cost of bridges and/or large drainage structures on regional thoroughfares and Arterial streets shown on the Major Thoroughfare Plan.

G. MINIMUM SIZES FOR OVER-SIZING CALCULATIONS

1. When calculations are made for oversizing requirements, the minimum sizes assumed to be necessary to serve the subdivision itself shall not be less than those in the following table.

TABLE 8-1: MINIMUM SIZES FOR OVERSIZING CALCULATIONS	
Water and Sewer Main	8 inches
Reclaimed Water Main	4 inches
Sewer Force Main	6 inches
Lift Station Capacity	100 gallons per minute per pump
Residential Street Width	Per TIA in Article 3, an approved Major Thoroughfare plan of the City, or programmed in a Capital Improvements Plan.
Non-Residential Street Width	Per TIA in Article 3, an approved Major Thoroughfare plan of the City, or programmed in a Capital Improvements Plan.

H. WATER, RECLAIMED WATER AND SEWER MAIN REIMBURSEMENTS

1. Eligibility for Reimbursement

When a subdivider must extend water, reclaimed water and/or sewer mains through previously unserviced and unsubdivided areas of a drainage basin, the City may reimburse the subdivider for that proportional cost of the extension by those entities who plat property between the original subdivider's subdivision and the point of connection to existing City utilities and connect pipelines directly to that water/sewer main extension.

2. Formula for Reimbursement

The amount of the reimbursement under this section shall be calculated as follows.

a. Determine the total area to be served by the water and sewer main extensions, including the original subdivision. It shall be the responsibility of the subdivider to provide the City with this information, to be substantiated by City staff.
b. Determine the cost of extension of the trunk mains minus any oversizing costs contributed by the City.

c. Determine the trunk main unit cost per acre by dividing the total adjusted cost #2 by the total acreage #1.
d. The unit cost per acre shall be charged to each subsequent subdivider who may connect to the trunk main and shall be paid to the subdivider who originally installed the trunk main, or the original subdivider's heirs or assigns.
e. Force mains or interbasin transfers which may connect to the trunk main shall not be included in the reimbursement for trunk main extension.

3. Forfeiture of Trunk Main Reimbursement

It shall be the sole responsibility of the subdivider due reimbursement under this section to maintain his/her current address on file with the City Manager. Should a reimbursement be payable and the subdivider cannot be contacted at the address on file in the City Manager's office, the right to a reimbursement under this section shall lapse 24 months after the date of the initial attempt to contact the subdivider and the subdivider shall forfeit all claims to the reimbursement. The City may utilize all forfeited reimbursements for any purpose related to the water and sewer systems as determined by the City Council.

4. New Subdivider's Contribution for Trunk Main Extension

When water, reclaimed water and sewer mains for a new subdivision are to be connected to trunk mains installed per the requirements of this section to prior subdivisions, the subdivider shall deliver to the City Manager, prior to final plat approval, a check for his/her portion of the trunk main based on the formula in Subsection 8.06.002. The contribution shall be based on the trunk main unit cost per acre multiplied by the number of acres in the subject subdivision. It shall be the responsibility of the subdivider to provide the City staff with evidence of the acreage involved.

7.10. PARK LAND DEDICATION

A. GENERALLY

1. Findings

Trails are considered an integral part of the City of Boerne's transportation system, consistent with the City of Boerne Comprehensive Plan, Parks and Trails Master Plan, and Transportation Master Plan.

2. Purpose

The purpose of this Section is to provide for park land and a connected trail network to meet the needs of a growing citizen population.

3. Applicability

a. Park Land Dedication and Improvement

The park land dedication and park improvement requirements of this Section shall apply to every new residential subdivision and residential development plat within the corporate limits of the City or the extraterritorial jurisdiction (ETJ) of the City, under the provisions of the Unified Development Code.

b. Trail Dedication and Improvement

The trail dedication and trail improvement requirements of this Section shall apply to every new residential and nonresidential subdivision and development plat in the City or the ETJ under the provisions of the Unified Development Code.

c. Additional open space requirements may be applicable for properties located within certain overlay districts of the City, as established by the zoning chapter of the Unified Development Code.

4. Consistency with the Master Plans of the City

a. All parks and trails shall be developed in a manner that is consistent with the Boerne Master Plan and the Parks Master Plan.

5. No Increase in the Number of Dwelling Units

a. Following initial imposition and satisfaction of park dedication and improvement requirements, additional requirements shall apply to revised plat applications for residential subdivisions only if such revised or renewed application results in an increase in the number of dwelling units.
b. In such case, park dedication requirements then in effect shall apply only to the additional dwelling units proposed in the Application.

6. Dedication Required for all Subdivision Plats and Development Plats

The subdivision of any parcel or tract of land into a residential subdivision within the City limits or ETJ, or the application for a development plat which changes the number of dwelling units permitted on any property, shall require the applicant to set aside and dedicate sufficient and suitable lands for the purpose of a park, or make an

in lieu financial contribution for the acquisition or development of park land in accordance with the provisions of this section.

a. No area or facility shall be dedicated for park land purposes unless approved and accepted by the City.
b. Subject to the City Council's determination, park land should be located to serve the greatest number of homes, limit the need to cross Arterials, and provide access to trails when applicable.
c. All subdivisions of land subject to the requirements of this Code shall conform to the most recent edition of the Comprehensive Plan or any specific Parks and Recreation Plan adopted by the City.
   All subdivision plats and development plats shall conform to the requirements of this Section.
d. As advised by the Director of Parks and Recreation and the Planning and Zoning Commission, the City Council and developer may negotiate the combination of park land dedication, payment of fees in lieu of required park land, or any combination thereof, to satisfy these requirements.

7. Exceptions

a. Applications Filed prior to Adoption of this Code
b. The park land dedication requirements and payment of fees in lieu of park land dedication requirement shall not apply to an Application for approval of a Preliminary Plat or Final Plat for a residential subdivision that was initially filed before the effective date of this Code, and which plat has not expired.
c. In such cases, other preexisting ordinances of the City pertaining to park land dedication shall nonetheless apply.
d. For all plat Applications for a residential subdivision filed after the effective date of this Code, park land dedication or improvement requirements for park facilities shall be imposed at the time of Preliminary Plat approval.
e. Requirements for park improvement fees set forth in this Section shall not apply to any Application for approval of a Preliminary Plat or Final Plat for a residential subdivision that was initially filed before the effective date of this Code, and which plat has not expired.
f. Smaller Residential Developments

   i. Single family developments less than ten (10) dwelling units in size shall not be required to dedicate park land.
   ii. Multifamily developments less than five (5) dwelling units in size shall not be required to dedicate park land.

8. Credit for Existing Public Open Space

Any application for development or subdivision of a property with existing public open space which is classified as one of the recognized Open Space Types of this Section may receive a credit for this open space.

9. Exclusions

a. When designating land for parks and trails, the following shall be excluded from the calculation of the area being dedicated:
b. Any required rights-of-way.
c. Any utility easement required by the City, except for those storm water system facilities that may be counted toward the open space requirements in accordance with this Section.

10. Storm water system facilities as open space

    Required storm water system facilities may be counted toward the minimum open space requirements if they meet the following criteria:

    a. Areas for natural drainage systems used for storm water facilities may be included as Natural Areas, Greenways or Stream Corridors, provided they also conform to the design standards for those areas.
    b. Areas for drainage detention may be included, provided they are designed and engineered as a permanent aesthetic and recreation amenity within one of the other open space types, and the permanent surface water areas do not exceed 25% of the open space area.
    c. Up to 50% of areas for drainage retention may be included, provided they are designed and engineered as a permanent aesthetic and recreation amenity within one of the other open space types, and the permanent surface water areas do not exceed 25% of the open space area.

B. DEDICATIONS AND FEE IN LIEU OF DEDICATIONS

1. The use of the parkland shall be restricted for park and recreation purposes by recorded covenant which runs with the land in favor or future owners of the property and which cannot be defeated or eliminated without the written consent of the city or its successors;
2. The proposed private parkland shall be reasonably adaptable for use for park and recreational purposes, taking into consideration such factors as size, shape, topography, geology, access and location.
3. Determining Amount of Park Land to Be Dedicated

    The acreage to be dedicated prior to Final Plat approval by the City Council of any residential subdivision shall be pro-rated as follows:

    a. 1 acre of parkland shall be dedicated for every 15 single family dwelling units of the development.
    b. 1 acre of parkland shall be dedicated for every 21 multi-family dwelling units of the development.

4. Fee In Lieu of Land Dedication for Parks

    a. The City may allow, at its option, to accept the payment of a fee in lieu of park land dedication or a combination of park land dedication and fees in lieu, in order to satisfy the requirements of this Section.
    b. Any proposed subdivision located within the ETJ shall be required to pay a fee in lieu of parkland dedication. For developments within the City's ETJ, the City, at its sole discretion, may accept private park land to satisfy all or a portion of the dedication requirements.
    c. Where the fee in lieu of park land is required or acceptable to City Council as provided for in this Section, such fee shall determined as follows:

        i. For single family development, the fee in lieu shall be $2,000.00 per dwelling unit.
        ii. For multi-family development, the fee in lieu shall be $1,400.00 per dwelling unit.

    d. The fee shall be imposed by the City at the time of approval of the Preliminary Plat and shall be paid prior to the release by the City of each Final Plat for filing in the deed records of Kendall County.

e. The City shall reserve the fees contributed in lieu of park land dedication in a separate account from the general funds of the City, along with any accrued interest, and shall proceed to complete acquisition or improvement of park land. All fees collected in lieu of park land dedication shall be expended in on a first in, first out basis.
f. If any or all of the funds are not spent for such purposes within ten (10) years from the date that they are collected, the developer shall have the right to request repayment by the City and the City shall refund the principal amount of all unexpended funds that were collected from the developer.

5. Park Land Dedication Methodology

For the purpose of this Chapter, the following park land dedication calculations reflect the maximum possible land dedication and fee in lieu of land dedication allowable. The City, at its option, may reduce the required land dedication and fee in lieu of payment.

Current Level of Service	
Population	16000
Total Park Land	430.7
Population Per Acre	37
Land Requirement	
People Per SFU	2.5
People Per MFU	1.75
SFU	37 people / 2.5 PPU = 15 units per acre
SFU Requirement	1 acre per every 15 SFU's
MFU	37 people / 1.75 PPU = 21 units per acre
MFU Requirement	1 Acre per every 21 MFU's
Fee in Lieu of Land Requirements	
Average Cost Per Acre	$30,000
SFU	$30,000/15 SFU's = $2,000 per SFU
MFU	$30,000/21 MFU's = $1,400 per MFU
Park Development Cost	
Cost of Improvements Per Acre	$50,000
SFU	$50,000/15 SFU's = $3,333 per SFU
MFU	$50,000/21 MFU's = $2,380 per MFU

6. Required Park Improvements

a. Installed Improvements
b. The developer shall improve all dedicated public park land with improvements approved by the City, prorated for an amount equal to at least $50,000 per acre

(this number needs to be determined based on average cost to develop an acre of parkland).

c. Design, specification, and construction of the improvements shall be subject to review and approval by the City.
d. Construction of the improvements must be completed within three (3) years of the City's approval of the first final plat of the subdivision.
e. Surety for construction of improvements shall be provided in the same manner as required of other subdivision- and site-related construction, as specified in (site section). *Timing of Public Improvement (or whatever the section is titled).*
f. Funds in Lieu of Improvements
g. In lieu of constructing the improvements, the developer may elect to contribute the required amount of funds in lieu of construction to the City to meet the City's current or future recreational needs.
h. The City shall reserve the fees contributed in lieu of park improvements in a separate account from the general funds of the City, along with any accrued interest, and shall proceed to complete acquisition or improvement of park land.
i. All fees collected in lieu of park development shall be expended in on a first in, first out basis. If any or all of the funds are not spent for such purposes within ten (10) years from the date that they are collected, the developer shall have the right to request repayment by the City and the City shall refund the principal amount of all unexpended funds that were collected from the developer.
j. If the developer pays fees in lieu of park land dedication in accordance with D.3 above, then the developer shall pay to the City a prorated improvements fee of $50,000 per acre of park land that is required to be dedicated, in addition to the fees paid in lieu of dedication.

7. Updating of Fees and Requirements

   a. The standard fees for contributions in lieu of park land dedication and minimum costs for improvements to park land as specified in this Section may be updated from time to time on the basis of current development costs and the City's level of service. The Parks and Recreation Director shall consider and make periodic recommendations to the City Council on such fees and costs.

8. The Parks and Recreation Director shall consider and make periodic recommendations to the City Council on design standards and other provisions of this Section.

   a. All such recommendations should be compiled and included within a Parks and Recreation Plan for the City, subject to final review adoption by the City Council.

C. PARK LAND AND TRAIL DESIGN REQUIREMENTS

1. Connectivity requirement

   All internal open spaces as well as open spaces of adjacent subdivisions shall be connected either directly or provisions shall be provided for the future connection of these areas. The connection may be through stream corridors if present, rural trails or trails associated with collector or higher classified streets, through the residential neighborhood sidewalk systems, or a combination of all of the above. In cases where corridors are not present or identified and no collector streets are present alternative connectivity concepts shall be considered.

2. Site Criteria for Parks

a. Any land to be dedicated to meet the requirements of this Chapter shall be reasonably located and adaptable for use as park land or recreation facility, consistent with the most recent edition of the Comprehensive Plan or any Parks and Recreation Plan as may be adopted by the City Council.
b. The Parks and Recreation Director shall make recommendations to the Planning and Zoning Commission and the City Council regarding the suitability of proposed park land. The location, access, size, shape, topography, natural drainage, utilities, parking facilities, and wooded areas and other vegetative cover of the parcel or tract of land to be dedicated shall be appropriate for public parks and recreation purposes. All such park land shall be designated and located so as to satisfy the following general requirements:
c. Dedication of Smaller Site

Dedicated land of less than the minimum required acreage may be developed based upon the recommendation from the Parks and Recreation Director that a smaller area is in the public interest, or that additional contiguous land will be reasonably available for dedication to or purchase by the City. Such developments may be required to contribute fees in lieu of park land or a combination of fees and park land. Wherever possible, the dedicated land should be adjoining a school site, public or nonprofit institution, church, or other community facility that enhances the open space and recreational benefit of the park land.

d. Street Frontage

Unless specifically exempted elsewhere in this section, access to park land designated on a subdivision plat shall be provided by the dedication of at least 200 feet of street frontage, in a manner satisfactory to the City, preferably a 200 foot by 200 foot corner site at the intersection of two streets. When the land abutting the designated park land is developed, the developer of such abutting land shall furnish and pay for all paving of all abutting street frontage and shall provide water and sewer access to the boundary of one side of the delineated park land area to meet minimum requirements of these regulations. No linear parking will be allowed on such frontage.

e. Site Criteria

The land to be dedicated to meet the requirements of these regulations shall be suitable for public parks and recreation activities. Requirements include but are not limited to.

f. Grade/Slope Required

No more than (50) percent of the dedicated land exceeding five (5) percent grade is permitted.

g. Utilities Required for Park Development

i. The developer shall be responsible for certain minimum utilities as listed below at a location acceptable to the Director of Public Works or designee.
ii. The Director of Public Works or designee will be required to approve such location in writing.
iii. These requirements are applicable for both public and private parks.
iv. All neighborhood parks shall have:

(a) A two (2) inch water service shall be located 12 feet behind the curb.

(b) A six (6) inch sewer stub shall be located 10 feet behind the curb.
(c) One electricity line shall be provided and located along at least one property line of the dedicated land.
(d) Ready access to at least two hundred (200) feet of street frontage. Preferably the land will be located at the intersection of two internal subdivision streets providing at least 200 feet of frontage on each corner side. If the park is in excess of 2 acres a minimum of eight onsite parking spaces shall be included on the site.

v. Mini Parks shall have a two 2-inch water service located 12 feet behind the curb.

h. Permanent Property Boundary Markers/Monuments Required

Above-ground, grade level survey markers are required to be permanently installed on all property lines of the dedicated land, in accordance with the survey requirements of this Chapter.

i. Restoration of Park Land

Any disturbed park land shall be restored and the soil stabilized by a vegetative cover by the developer using approved xeriscape species.

j. Floodplain

Areas located within the 100-year floodplain of the main channels of Cibolo Creek and Menger Creek may be dedicated in fulfillment of the dedication requirements, subject to approval by the City Council. Said dedication will include, at a minimum, a strip one-hundred (300) feet wide on both sides measured from the center of the creek channel. The Menger Creek dedication may be reduced to 150 feet upon City Council approval. Are there others we want to include?

k. Parking

Where the City determines that parking is necessary to provide for access and ease of use to dedicated park land, the amount of parking shall be provided in a manner determined by the Director of Planning.

l. Hazardous Substances

i. Prior to dedication of park land, the developer shall make full disclosure of the presence of any hazardous substances or Underground Storage Tank (U.S.T.s) of which the developer has knowledge.
ii. The City, at its discretion, may proceed to conduct such initial environmental tests and surveys on the land as it may deem appropriate, and the developer shall grant to the City and its agents and employees such reasonable access to the land as is necessary to conduct such surveys and tests.
iii. If the results of such surveys and tests indicate a reasonable possibility of environmental contamination or the presence of U.S.T.s, the City may require further survey and tests to be performed at the developer's expense as the City may deem necessary prior to its acceptance of the dedication, or in the alternative, the developer may be required to identify alternative property or pay the fees in lieu of such park land dedication. The owner continues as the responsible party until remediated and accepted.

m. Site Condition

i. The park site shall be free of trash and debris.
ii. If the condition of the dedicated park land is disturbed during construction of subdivision improvements then the developer shall be responsible for returning the dedicated land to its previous condition prior to or at the time of final plat filing.
iii. The public improvements to be constructed per the applicable subdivision plat will not be accepted by the City until such time that the above conditions have been met.

3. Greenbelts

a. Greenbelts are areas that are left in a natural condition, but which are publicly accessible.
b. Greenbelt widths, right-of-way and construction shall be in conformance with the requirements of this Chapter and the Infrastructure and Subdivision Design Chapter of the Unified Development Code.
c. Trail specifications and trail furnishings, such as signage, trash receptacles, benches and pet waste stations, shall be in accordance with City standards.
d. Minimum frontage requirements where a greenbelt intersects a road shall be according to road type, as follows.

i. Arterials

Minimum frontage required for arterial roads is 50 feet.

ii. Collectors

Minimum frontage required for collector roads is 40 feet.

iii. Local Roads

Minimum frontage required for local roads is 30 feet.

iv. Cul-de-sacs

Minimum frontage required for cul-de-sacs is 15 feet.

e. Rights-of-way and construction shall be in conformance with the requirements of this Chapter and the construction standards and specifications of the City Public Works Department.

4. Trails

Land shall be dedicated and trails constructed to conform to the City of Boerne Parks Master Plan as follows:

a. Extensions of the trail network, other than as shown in the Parks Master Plan shall be included in the calculation of the amount of dedicated park and recreational area.
b. Trail Standards

All trails shall conform to the following standards:

i. General

Unless specified otherwise, all trails shall be constructed to City specifications and shall conform to the requirements of the Americans with Disabilities Act, as may be amended. Specifications for trail surfaces, bollards, and signs shall be provided by the City.

ii. Multipurpose Trails

A multipurpose trail is a trail alignment specifically identified in the Parks Master Plan. Trails designated as multipurpose trails in the Parks Master Plan shall be a minimum of eight (8) feet in width.

iii. Auxiliary Trails

An auxiliary trail is a trail/walkway located within an open space area that is not linked to a multipurpose trail. Auxiliary trails shall be a minimum of six (6) feet in width.

iv. Access Walkways

An access walkway is any trail/walkway that links to a multipurpose trail. All access walkways shall be a minimum of six (6) feet in width.

c. Trail Rights of Way or Easements

Trails shall be placed in a right of way or pedestrian access easement. Pedestrian access easements shall be a minimum of twelve (12) feet in width. This may be a shared easement with public utilities as approved by the City Engineer.

D. PARK LAND DEDICATION CREDITS

1. Full Credit for Public Parks

All park land and improvements thereto shall be dedicated to the public unless credit for private park land is given consistent with the criteria set forth below and approved by the City. All residents of and the City, its ETJ, and the owners of lots within the subdivision in which park land is dedicated or fees in lieu are contributed shall have the same rights and privileges to use City park land and facilities once the park land dedications are made or fees are paid to the City.

2. Partial Credit Considered for Certain Private Parks

The City may, at its sole discretion, give partial credit to the developer where a substantial private park and recreational area is provided in a proposed residential subdivision. Such credit shall not exceed fifty (50) percent of the total acreage requirements for park land dedication and funding requirements for park improvement as set forth in this Section. In order to allow credit for private park land, the City must find that it is in the public interest to do so and that all the following standards are met.

a. That yards, court areas, setbacks, and other open areas required to be maintained by the rules and regulations of the City shall not be included in the computation of such private recreational open space;
b. That the private ownership and maintenance of the open space and facilities is adequately provided for by recorded agreement, covenants, or restrictions;

c. That the use of the private open space is restricted for park and recreation purposes by recorded covenant, which runs with the land in favor of future owners of the property and which cannot be defeated or eliminated without the written consent of the City or its successors;
d. That the proposed private open space is reasonably adaptable for use for park and recreational purposes, consistent with the park land design requirements specified in this section of the Code. Private swimming pools operated and maintained by an HOA shall not be considered as meeting the requirements of this section;
e. That the facilities proposed for the private open space are in substantial accordance with the provisions of the Comprehensive Plan, Parks and Recreation Plan, and other adopted plans of the City;
f. That the private open space for which partial credit is given is a minimum of five (5) acres and provides a minimum of ($50,000 this number will need to be determined based on typical per acre cost to develop a park.) per acre or portion thereof in park and recreation improvements, subject to the approval of the City, and that assurance is provided in a form acceptable to the City that the proposed dedication of land and improvements will be completed in a timely manner; and
g. That, in addition to the private park land and improvements provided, there is an amount of public open space and improvements provided or a proportional amount of fees in lieu of dedicated park land and improvements provided in compliance with the park land design requirements and improvement requirements specified in D and E below.

3. Partial Credit Considered for Certain Site Requirements

In the case of areas that do not meet the grade, slope, or other requirements for park land dedication found in this section, but that are known to contain sensitive environmental features, the City may, at its discretion and after review by the Parks and Recreation Director, modify these standards subject to the following limitations:

a. That such areas shall provide recreational or educational opportunities for the surrounding community in lieu of park land dedication;
b. That such areas shall be given a partial credit against the requirement of land dedication or payment of fees.
c. Such credit shall not exceed fifty (50) percent of the total acreage requirements for park land dedication and funding requirements for park improvement as set forth in this Section.
d. That such areas shall meet any additional standards deemed necessary by the City Council after a recommendation by the Parks and Recreation Director, pertaining to the dedication of land containing sensitive environmental features.

4. Credit for Easements in Conservation Subdivisions

a. For conservation subdivisions, any land that is dedicated as a conservation area by easement or another method of designating the space in perpetuity shall receive a credit for the conservation area as follows:
b. 100% of the conservation area shall be credited against the parkland dedication requirement if the conservation area:

i. is 5 acres or larger;
ii. is publicly accessible; and
iii. connects to the City's trail network or an adjacent public park with trails designed and constructed according to City standards

c. 75% of the conservation area shall be credited against the parkland dedication requirement if the conservation area:

i. Is 5 acres or larger

d. 50% of the conservation area shall be credited against the parkland dedication requirement if the conservation area is less than 5 acres in size.

5. The City shall have full discretion to consider, approve, or deny any request for credits as set forth in this Section. The Parks and Recreation Director shall consider and make recommendations to the City Council on any such request.

BOERNE UNIFIED DEVELOPMENT CODE

8. ENVIRONMENTAL DESIGN

September 27, 2019 Version 3.1

MOSAIC

City of Boerne

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8.1. FLOODPLAIN MANAGEMENT

A. EDITOR'S NOTE

Ord. No. 2001-33, adopted Oct. 23, 2001, repealed the former Ch. 9, §§ 9-1—9-12, 9-41—9-47, and 9-71—9-75, and enacted a new Ch. 9 as set out herein. The former Ch. 9 pertained to flood prevention and control and derived from Ord. No. 87-6, arts. 1—5, adopted Feb. 23, 1987.

B. CROSS REFERENCE

Administration, Ch. 2; Buildings and Building Regulations, Ch. 9 of the Unified Development Code; Emergency Management, Ch. 7; Streets and sidewalks, Ch. 19; Infrastructure and Land Subdivision Design, Ch 6 of the Unified Development Code; Zoning, Ch. 3 of the Unified Development Code.

C. STATE LAW REFERENCE

Authority of the City to provide for flood control, V.T.C.A., Water Code § 16.315.

D. GENERALLY

1. Findings of Fact

a. Flood losses are created by the cumulative effect of obstructions in floodplains which cause an increase in flood heights and velocities, and by the occupancy of flood hazard areas by uses vulnerable to floods and hazardous to other lands because they are inadequately elevated, floodproofed or otherwise protected from flood damage. (Ord. No. 2001-33, art. I, § B, 10-23-01; Ord. No. 2009-51, art. 1, § B, 11-24-09)
b. The flood hazard areas of the city are subject to periodic inundation, which results in loss of life and property, health and safety hazards, disruption of commerce and governmental services, and extraordinary public expenditures for flood protection and relief, all of which adversely affect the public health, safety and general welfare.
c. (Ord. No. 2001-33, art. I, § C, 10-23-01; Ord. No. 2009-51, art. 1, § C, 11-24-09)

2. Authority

The legislature of the state has in the Flood Control Insurance Act, V.T.C.A., Water Code § 16.315, delegated the responsibility of local governmental units to adopt regulations designed to minimize flood losses. (Ord. No. 2001-33, art. I, § A, 10-23-01; Ord. No. 2009-51, art. 1, § A, 11-24-09)

3. Statement of purpose

It is the purpose of this chapter to promote the public health, safety and general welfare and to minimize public and private losses due to flood conditions in specific areas by provisions designed to:

a. Protect human life and health;
b. Minimize expenditure of public money for costly flood control projects;
c. Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
d. Minimize prolonged business interruptions;

e. Minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets and bridges located in floodplains;
f. Help maintain a stable tax base by providing for the sound use and development of flood-prone areas in such a manner as to minimize future flood blight areas; and
g. Insure that potential buyers are notified that property is in a flood area.

4. Applicability

a. The chapter shall apply to all areas of special flood hazard with the jurisdiction of Boerne.
b. (Ord. No. 2001-33, art. III, § A, 10-23-01; Ord. No. 2009-51, art. 3, § A, 11-24-09)

5. Compliance Required

a. All subdivisions shall conform to the "Flood Disaster Protection Act of 1973," Public Law 93-234, and the latest revisions thereof, as well as the Flood Damage Prevention Ordinance, as amended, and policies as dictated by the Federal Emergency Management Agency.
b. Base flood elevation data shall be generated for subdivisions and other proposed development which are greater than 50 lots or 5 acres, whichever is lesser, that are in areas which are not included in the City of Boerne Flood Insurance Rate Map (FIRM) Community-Panel Number 480418 effective December 17, 2010, or for which a detailed study was not completed as indicated on the aforementioned map or later FIRM that may be completed by FEMA and provided the City of Boerne. These elevations shall be submitted to FEMA in the form of a Letter of Map Revision (LOMR) to be included in the City of Boerne FIRM maps.
c. No structure or land shall hereafter be located, altered, or have its use changed without full compliance with the terms of this chapter and other applicable regulations. (Ord. No. 2001-33, art. III, § D, 10-23-01; Ord. No. 2009-51, art. 3, § D, 11-24-09)

6. Abrogation and greater restrictions

This chapter is not intended to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this chapter and another ordinance, easement, covenant, or deed restriction conflict or overlap, whichever imposes the more stringent restrictions shall prevail. (Ord. No. 2001-33, art. III, § E, 10-23-01; Ord. No. 2009-51, art. 3, § E, 11-24-09)

7. Interpretation

In the interpretation and application of this chapter, all provisions shall be:

a. Considered as minimum requirements;
b. Liberally construed in favor of the governing body; and
c. Deemed neither to limit nor repeal any other powers granted under state statutes.

(Ord. No. 2001-33, art. III, § F, 10-23-01; Ord. No. 2009-51, art. 3, § F, 11-24-09)

8. Warning and disclaimer of liability

The degree of flood protection required by this chapter is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. On rare occasions greater floods can and will occur and flood heights may be increased by man-made or natural causes. This chapter does not imply that land outside the areas

of special flood hazards or uses permitted within such areas will be free from flooding or flood damages. This chapter shall not create liability on the part of the community or any official or employee thereof for any flood damages that result from reliance on this chapter or any administrative decision lawfully made hereunder. Penalties for noncompliance

No structure or land shall hereafter be constructed, located, extended, converted, or altered without full compliance with the terms of this court order and other applicable regulations. Violation of the provisions of this court order by failure to comply with any of its requirements (including violations of conditions and safeguards established in connection with conditions) shall constitute a misdemeanor. Any person who violates this court order or fails to comply with any of its requirements shall upon conviction thereof be fined not more than one thousand dollars ($1,000.00) for each violation, and in addition shall pay all costs and expenses involved in the case. Nothing herein contained shall prevent the city from taking such other lawful action as is necessary to prevent or remedy any violation.

E. DESIGNATION (§05 OF SUBDIVISION CHAPTER)

1. The areas of special flood hazard identified by the Federal Emergency Management Agency in the current scientific and engineering report entitled, "The Flood Insurance Study (FIS) for City of Boerne, Texas, Kendall County," dated March of 1983, with accompanying flood insurance rate maps and/or flood boundary-floodway maps (FIRM and/or FBFM) dated September 1983, and any revisions thereto are hereby adopted by reference and declared to be a part of this chapter.
2. Federal flood plains are based on a 100-year frequency discharge and apply only in those areas where official Federal Emergency Management Agency maps have been prepared, or where 100-year water and surface profile studies are available for the City and its extraterritorial jurisdiction.

F. ADMINISTRATION

1. Designation of the floodplain administrator

The city manager shall designate a floodplain administrator to administer and implement the provisions of this chapter and other appropriate sections of 44 CFR (Emergency Management and Assistance—National Flood Insurance Program Regulations) pertaining to floodplain management.

2. Duties and responsibilities of the floodplain administrator

Duties and responsibilities of the floodplain administrator shall include, but not be limited to, the following:

a. Maintain and hold open for public inspection all records pertaining to the provisions of this chapter.
b. Review permit application to determine whether to ensure that the proposed building site project, including the placement of manufactured homes, will be reasonably safe from flooding.
c. Review, approve or deny all applications for development permits required by adoption of this chapter.
d. Review permits for proposed development to assure that all necessary permits have been obtained from those federal, state or local governmental agencies (including Section 404 of the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1334) from which prior approval is required.

e. Where interpretation is needed as to the exact location of the boundaries of the areas of special flood hazards (for example, where there appears to be a conflict between a mapped boundary and actual field conditions) the floodplain administrator shall make the necessary interpretation.
f. Notify, in riverine situations, adjacent communities and the state coordinating agency which is the Texas Water Development Board (TWDB) and also the Texas Commission on Environmental Quality (TCEQ), prior to any alteration or relocation of a watercourse, and submit evidence of such notification to the Federal Emergency Management Agency.
g. Assure that the flood-carrying capacity within the altered or relocated portion of any watercourse is maintained.
h. When base flood elevation data has not been provided in accordance with section 9-7, the floodplain administrator shall require the owner of the property or his representative to perform the necessary hydraulic studies to determine the 100-year floodplain, base flood elevation and floodway to obtain a letter of map revision from FEMA. The floodplain administrator may obtain, review and reasonably utilize any base flood elevation data and floodway data available from a federal, state or other source, in order to administer the provisions of article III.
i. When a regulatory floodway has not been designated, the floodplain administrator must require that no new construction, substantial improvements, or other development (including fill) shall be permitted within Zones A1-30 and AE on the community's FIRM, unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one (1) foot at any point within the community.
j. Under the provisions of 44 CFR Chapter 1, Section 65.12, of the National Flood Insurance Program regulations, a community may approve certain development in Zones A1-30, AE, AH, on the community's FIRM which increases the water surface elevation of the base flood by more than one (1) foot, provided that the community first completes all of the provisions required by Section 65.12.

G. RESTRICTIONS

1. Until a regulatory floodway is designated, no new construction, substantial improvements, or other development (including fill) shall be permitted in an area having special flood hazards as defined in this Chapter, unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not substantially increase the water surface elevation of the 100-year flood at any point within the City's subdivision jurisdiction.

H. FLOODPLAIN HAZARD REDUCTION

1. Establishment of development permit

A floodplain development permit shall be required to ensure conformance with the provisions of this chapter. The process for obtaining a Floodplain Development Permit is established in Chapter 2 Procedures. (Ord. No. 2001-33, art. III, § C, 10-23-01; Ord. No. 2009-51, art. 3, § C, 11-24-09)

2. Methods of reducing flood losses

   a. Restrict or prohibit uses that are dangerous to health, safety or property in times of flood, or cause excessive increases in flood heights or velocities;
   b. Require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;
   c. Control the alteration of natural floodplains, stream channels, and natural protective barriers, which are involved in the accommodation of floodwaters;
   d. Control filling, grading, dredging and other development which may increase flood damage;
   e. Prevent or regulate the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards to other lands.

3. General standards for areas of special flood hazard

   In all areas of special flood hazards the following provisions are required for all new construction and substantial improvements:

   a. New or replacement water supply systems and/or wastewater systems shall be designed to minimize or eliminate infiltration of flood waters into the systems and discharges from the systems into flood waters. (§05 SUBDIVISIONS)
   b. On-site waste disposal systems shall be located so as to avoid impairment of them or contamination from them during flooding. (§05 SUBDIVISIONS)
   c. All new construction or substantial improvements shall be designed (or modified) and adequately anchored to prevent flotation, collapse or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy;
   d. All new construction or substantial improvements shall be constructed by methods and practices that minimize flood damage;
   e. All new construction or substantial improvements shall be constructed with materials resistant to flood damage;
   f. All new construction or substantial improvements shall be constructed with electrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities that are designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding;
   g. All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of floodwaters into the system;
   h. Proposed Subdivisions

      i. Proposed subdivisions shall be reviewed to assure that:

         (a) All such proposals are consistent with the need to minimize flood damage;
         (b) All public utilities and facilities, such as sewer, gas, electrical, and water systems are located, elevated, and constructed to minimize or eliminate flood damage; and
         (c) Adequate drainage is provided so as to reduce exposure to flood hazards.

      ii. Access to Subdivisions

         The Planning and Zoning Commission shall not permit new “island” subdivisions, lots or streets that would be surrounded by the flood waters of the 100-year flood, unless:

(a) The area is accessible to high ground by a street elevated above the 100-year flood level; or
(b) The evidence presented shows that the surface area and elevation of the "island" is sufficient to sustain the residents safely during a 100-year flood.

4. Areas of shallow flooding (AO/AH zones)

Located within the areas of special flood hazard established in section 9-7 are areas designated as shallow flooding. These areas have special flood hazards associated with flood depths of one (1) to three (3) feet, where a clearly defined channel does not exist, where the path of flooding is unpredictable, and where velocity flow may be evident. Such flooding is characterized by ponding or sheet flow; therefore, the following provisions apply:

a. All new construction and substantial improvements of residential structures have the lowest floor (including basement) elevated to one (1) foot above the base flood elevation or the highest adjacent grade at least as high as the depth number specified in feet on the community's FIRM (at least two (2) feet if no depth number is specified).
b. All new construction and substantial improvements of nonresidential structures;

i. have the lowest floor (including basement) elevated to one (1) foot above the base flood elevation or the highest adjacent grade at least as high as the depth number specified in feet on the community's FIRM (at least two (2) feet if no depth number is specified), or
ii. together with attendant utility and sanitary facilities be designed so that below the base specified flood depth in an AO Zone, or below the base flood elevation in an AH Zone, level the structure is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads of effects of buoyancy.

c. A registered professional engineer or architect shall submit a certification to the floodplain administrator that the standards of this section, as proposed in section 9-43 are satisfied.
d. Require within Zones AH or AO adequate drainage paths around structures on slopes, to guide floodwaters around and away from proposed structures.

5. Floodways

Located within areas of special flood hazard established in section 9-7 are areas designated as floodways. Since the floodway is an extremely hazardous area due to the velocity of floodwaters which carry debris, potential projectiles and erosion potential, the following provisions shall apply:

a. Encroachments are prohibited, including fill, new construction, substantial improvements and other development within the adopted regulatory floodway unless it has been demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed encroachment would not result in any increase in flood levels within the community during the occurrence of the base flood discharge.
b. If subsection (1) is satisfied, all new construction and substantial improvements shall comply with all applicable flood hazard reduction provisions of this article.
c. Under the provisions of 44 CFR Chapter 1, Section 65.12, of the National Flood Insurance Program Regulation, a community may permit encroachments within

the adopted regulatory floodway that would result in an increase in base flood elevations, provided that the community first completes all of the provisions required by this Chapter.

6. Areas of Special Flood Hazard

In all areas of special flood hazards where base flood elevation data has been provided:

a. The limits of the 100-year flood plain and the limits of the floodway shall be shown on the preliminary and final plats as applicable.
b. Residential construction

New construction and substantial improvement of any residential structure shall have the lowest floor (including basement), elevated to one (1) foot above the base flood elevation. A registered professional engineer, architect, or land surveyor shall submit a certification to the floodplain administrator that the standard of this subsection as proposed in section 9-43(1)(a) is satisfied.

c. Nonresidential construction

New construction and substantial improvements of any commercial, industrial or other nonresidential structure shall either have the lowest floor (including basement) elevated one (1) foot above the base flood level or together with attendant utility and sanitary facilities, be designed so that below the base flood level the structure is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy. A registered professional engineer or architect shall develop and/or review structural design, specifications, and plans for the construction, and shall certify that the design and methods of construction are in accordance with accepted standards of practice as outlined in this subsection. A record of such certification which includes the specific elevation (in relation to mean sea level) to which such structures are floodproofed shall be maintained by the floodplain administrator.

d. Enclosures

New construction and substantial improvements, with fully enclosed areas below the lowest floor that are usable solely for parking of vehicles, building access or storage in an area other than a basement and which are subject to flooding shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement must either be certified by a registered professional engineer or architect or meet or exceed the following minimum criteria:

i. A minimum of two (2) openings on separate walls having a total net area of not less than one (1) square inch for every square foot of enclosed area subject to flooding shall be provided.
ii. The bottom of all openings shall be no higher than one (1) foot above grade.
iii. Openings may be equipped with screens, louvers, valves, or other coverings or devices provided that they permit the automatic entry and exit of floodwaters.

e. Manufactured homes

i. Require that all manufactured homes to be placed within Zone A on a community's FHBM or FIRM shall be installed using methods and

practices which minimize flood damage. For the purposes of this requirement, manufactured homes must be elevated and anchored to resist flotation, collapse, or lateral movement. Methods of anchoring may include, but are not limited to, use of over-the-top or frame ties to ground anchors. This requirement is in addition to applicable state and local anchoring requirements for resisting wind forces.

ii. Require that manufactured homes that are placed or substantially improved within Zones A1-30, AH, and AE on the community's FIRM on sites:

(a) outside of a manufactured home park or subdivision;
(b) in a new manufactured home park or subdivision;
(c) in an expansion to an existing manufactured home park or subdivision; or
(d) in an existing manufactured home park or subdivision on which a manufactured home has incurred "substantial damage" as a result of a flood, be elevated on a permanent foundation such that the lowest floor of the manufactured home is elevated to or above the base flood elevation and be securely anchored to an adequately anchored foundation system to resist flotation, collapse, and lateral movement.

iii. Require that manufactured homes be placed or substantially improved on sites in an existing manufactured home park or subdivision with Zones A1-30, AH and AE on the community's FIRM that are not subject to the provisions of this section be elevated so that either:

(a) the lowest floor of the manufactured home is at or above the base flood elevation, or
(b) the manufactured home chassis is supported by reinforced piers or other foundation elements of at least equivalent strength that are no less than thirty-six (36) inches in height above grade and be securely anchored to an adequately anchored foundation system to resist flotation, collapse, and lateral movement.

f. Recreational vehicles

Require that recreational vehicles placed on sites within Zones A1-30, AH, and AE on the community's FIRM either (i) be on the site for fewer than one hundred eighty (180) consecutive days, or (ii) be fully licensed and ready for highway use, or (iii) meet the permit requirements of section 9-43(1), and the elevation and anchoring requirements for "manufactured homes" in this section. A recreational vehicle is ready for highway use if it is on its wheels or jacking system, is attached to the site only by quick-disconnect type utilities and security devices and has no permanently attached additions.

7. Subdivision Proposals

a. All subdivision proposals, including the placement of manufactured home parks and subdivisions, shall be consistent with this Chapter.
b. All proposals for the development of subdivisions, including the placement of manufactured home parks and subdivisions, shall meet floodplain development permit requirements of sections 9-8, 9-43 and the provisions of this article.
c. Base flood elevation data shall be generated for subdivision proposals and other proposed development, including the placement of manufactured home parks and subdivisions, which is greater than fifty (50) lots or five (5) acres, whichever is

lesser, if not otherwise provided pursuant to section 9-7 or sections 9-42(8). These elevations shall be submitted to FEMA for inclusion in the city FIRM maps.

d. All subdivision proposals, including the placement of manufactured home parks and subdivisions, shall have adequate drainage provided to reduce exposure to flood hazards.

e. All subdivision proposals, including the placement of manufactured home parks and subdivisions, shall have public utilities and facilities such as sewer, gas, electrical and water systems located and constructed to minimize or eliminate flood damage.

8.2. WATERSHED PROTECTION

8.3. TREE PRESERVATION

A. PURPOSE

It is the purpose of this Ordinance to ensure environmental sensitive site planning to facilitate site design and construction, to contribute to the long term viability of existing trees, to control the removal of trees when necessary, specifically, preservation of the trees defined as Legacy Trees, to enhance the environmental and ecological performance and aesthetic quality of commercial and residential developments, and to prohibit the indiscriminate clear cutting of property.

B. APPLICABILITY

1. No tree shall be removed unless such removal meets all the provisions of this or any other applicable ordinance adopted by the City Council of the City of Boerne, Texas.
2. This Ordinance does not preclude the removal of any tree from a proposed building foot print or the only practical sites for ingress and egress from parking areas.
3. This Ordinance shall regulate all activities that result or may result in the removal of tree(s) in the City limits of Boerne Texas. Said activities include any of the following conducted on property to which the section applies:

    a. All residentially zoned property for which a subdivision is accepted by the City after the effective date of this ordinance
    b. Industrial, commercial, office, multi-family, institutional development and schools, including all new construction and any additions greater than 2500 square feet.
    c. Construction of a new parking lot or expansion of an existing parking lot.
    d. Any grading, filling or clearing of land.
    e. Chemical or biological treatment of tree(s) that may result in the death or destruction of any tree(s) as defined.
    f. Trenching or excavating that may damage or destroy Legacy as defined.
    g. All governmental development shall comply with the tree preservation plan review procedure regardless of the zoning district in which they are located.
    h. Detached and attached dwelling lots platted after the effective date of this ordinance.

C. EXCEPTIONS

The following shall be exempt from the requirements of this Ordinance:

1. Lots on which buildings were constructed prior to the adoption of this ordinance and subsequently damaged by fire, explosion, flood, tornado, riot, act of the public enemy, or accident of any kind, provided a building Permit is issued for restoration within 12 months after the damage occurs and additional square footage is not proposed.
2. All residentially zoned lots of one half (1/2) acre or less whether platted prior to or after the effective date of this ordinance.

D. MINIMUM TREE PRESERVATION REQUIREMENTS

1. No Legacy tree shall be removed from any real property within the City of Boerne without following the provisions as stated below.
2. The following shall apply to Legacy trees:

    a. Commercial and Multi-family – A minimum of 30% of Standard trees, exclusive of Heritage trees, shall be preserved on a lot.

b. Subdivision Development of Single-family and other residentially zoned areas – The removal of trees for the purpose of clearing and installation for infrastructure (roads, utilities, etc.) and lot lines is allowed.
c. Commercial, Industrial and Multi-family – Heritage trees shall be preserved and shall not be removed without mitigation.
d. Single-family and other residentially zoned areas – Heritage trees shall be identified on the plat and shall be preserved.
e. Steep slopes – Standard and Heritage trees shall not be removed from a Steep Slope area.
f. Stream Setback zones -

No trees shall be removed without following the procedures set forth in Section 05 to include the limitations identified below:

i. Stream Setback Zone 1 – Legacy trees shall be preserved as follows:

(a) Standard trees – 80%
(b) Heritage trees – 100%

ii. Stream Setback Zone 2 – Legacy trees shall be preserved as follows:

(a) Standard trees – 50%
(b) Heritage trees – 100%

E. REPLACEMENT OF TREES REMOVED

1. Removal of standard trees on residential lots does not require mitigation.
2. Mitigation is required for removal of heritage trees from a residential lot, in keeping with the requirements of this Section.
3. Standard or Heritage trees which are removed shall be mitigated using any combination of the following:

a. mitigated with existing Legacy trees, and/or
b. replaced by new Legacy trees or other indigenous tree species deemed acceptable by the City Manager, and/or
c. mitigated by paying into the Tree Restoration Fund.

4. The preservation of Legacy trees on-site is encouraged and may be used as mitigation to offset the removal of Standard or Heritage trees. The mitigating trees may be of any Legacy tree or species with an aggregate TC in inches of one the trees removed (1:1).
5. Replacement trees shall be planted on the same lot according to an approved TPP or another site as be determined by the City Manager.
6. The replacement trees may be of any Legacy tree species or other indigenous tree species deemed acceptable by the City Manager with an aggregate TC in inches of one and a half the trees removed (1:1 ½) and a minimum circumference of nine inches (9”).
7. If there is not a suitable location as determined by the City Manager for the replacement trees on the subject site or another site, payment shall be made into the Tree Restoration Fund in the following amounts:

a. Standard or Heritage Trees: $50 per TC of Standard or Heritage Tree removed
b. If it is necessary to convert circumference to caliper when purchasing replacement trees, the cost shall be calculated as:

caliper inch = TC/3.1415, where

TC is total caliper inches

8. A minimum of five different Legacy tree species must be planted if more than 300 inches in trunk circumference of trees are required. The City Manager may approve other indigenous tree species as acceptable replacement trees if it is determined the trees are indigenous, live longer than 35 years and grow to a height of at least 35 feet. This requirement is meant to prevent large monocultures from being planted on sites, which increases chances of disease epidemics.
9. The planting of Spanish Oak (*quercus shumardii*), Texas Red Oak (*quercus texana*) and similar thin bark red oaks is prohibited. These trees are potential sources of innoculum for the Oak Wilt fungus, *Ceratocystis fagacearum*. Fungal spore mats formed on these types of trees are attractive to insect vectors, which results in long range dissemination of the fungus.

F. PRESERVATION AND PROTECTION OF LEGACY STANDARD OR HERITAGE TREES

Legacy Standard or Heritage trees shall be protected under the following conditions:

1. No clear-cutting is permitted.
2. No materials intended for the use in construction or waste materials accumulated due to excavations or demolition shall be placed within the limits of the trees' root protection zone.
3. Neither substances used to clean equipment nor other foreign materials shall be deposited or allowed to flow overland within the root protection zone of a Legacy Standard or Heritage tree. This includes, without limitation, paint, oil, solvents, asphalt, concrete, mortar or similar materials.
4. No signs, wires or other objects, other than those of a protective nature, shall be attached to any Legacy tree. However, lighting of a decorative nature may be attached to a Legacy tree. The lighting shall be attached in a manner so as not to damage the Legacy Standard or Heritage tree.
5. No vehicular and/or construction traffic or parking shall take place within the limits of the root protection zone of a Legacy Standard or Heritage tree other than on an existing paved surface. This restriction does not apply to access within the root protection zone for purposes of clearing underbrush.
6. All trees to be retained as part of an approved Tree Preservation Plan shall be protected during grading and construction. A protective barrier shall be erected around the root protection zone before the beginning of grading and construction, and the barrier shall be maintained until construction is completed. During grading and construction, no excess soil, additional fill, equipment, liquids or construction debris shall be placed inside the protective barrier, and no soil shall be removed from within the barrier. The proposed finished grade of the land within the root protection zone shall not be raised or lowered by more than six inches but welling and retaining methods may be used to protect the area outside the root protection zone. The root protection zone shall remain unpaved. If wells are used to a preserve a Legacy Standard or Heritage tree the wells shall have a drain installed or a pump shall be installed to ensure that the well does not hold water.
7. No paving with asphalt, concrete or other impervious materials shall be placed within the root protection zone of a heritage tree.
8. In those situations where a Legacy tree is within 50 feet of a construction area, a protective fence, minimum of four feet in height, shall be erected and maintained outside of the root protection zone of each Legacy Standard or Heritage tree or tree group.

G. VIOLATIONS AND REMEDIES

1. If any Standard or Heritage trees are removed from any real property without an approved permit, or if such trees are injured because of failure to follow required tree protection measures such that the tree dies or may reasonably be expected to die, the City shall have the authority to enact one or more of the following administrative and civil penalties on the developer and/or owner of the property.

    a. A monetary penalty of $250.00 per TC of the Standard or Heritage trees removed, payable to the City, as well as replacement with trees as stated in subsection (2) below.
    b. Replacement with Legacy trees having an aggregate TC which is five times the aggregate TC of the Legacy trees that were removed or killed.

2. Wherever by the provisions of this Article the performance of any act is required, or the performance of any act is prohibited, or wherever any regulation is imposed, a failure to comply with the provisions of this Article shall constitute a violation of this Article. The City Manager may institute any appropriate action or proceedings to prevent the unlawful removal or destruction of trees, and to restrain, correct or abate such violation. Every day on which a violation exists shall constitute a separate violation and a separate offense. The penalty for each offense shall not exceed one thousand dollars ($1,000.00).

8.4. STEEP SLOPES (ZONING §03.05.003)

A. PURPOSE

The purpose of this ordinance is to regulate the intensity of use in areas of steeply sloping, elevated terrain while promoting future development on a scale that maintains the hill country character and identity by preserving the natural environment and scenic corridors.

B. APPLICABILITY

This ordinance shall be applicable to any subdivision or development located in city limits of the City of Boerne. Land disturbance for the purpose of this ordinance shall mean any activity involving the clearing, cutting, excavation, grading, filling, storing, transporting of land or any other activity which causes land to be exposed.

C. DOCUMENTATION OF CONDITIONS REQUIRED

If any slope of 15% or greater exists on a site, a slope map shall be provided as described in Chapter 2 Procedures.

D. RESTRICTIONS ON DISTURBANCE OF STEEP SLOPES

The maximum percentage of lot area or site area of a development which may be disturbed, graded, and cleared of vegetation during development and construction of the public and private improvements with the exception of incidental grading for structure construction is as follows:

1. Any disturbance to steep slopes, regardless of grade, shall be achieved by terracing the area.

    a. Terraces shall be designed and constructed with no more than eight (8) vertical feet for every ten (10) horizontal feet of area per terrace.
    b. Multiple terraces may be constructed in sequence.
    c. The terraces must be designed by an engineer and certified after construction by the design engineer.
    d. The terrace must be constructed using vegetated retaining walls to allow for drainage and plant growth.
    e. The vertical terraces should allow natural growth through and the horizontal sections shall be irrigated and planted with climbing/draping vines or similar types of plants that will grow along the vertical sections. In addition, the horizontal section of the terrace shall be fully landscaped to include planted trees that typically do not achieve a height of thirty (30) feet.
    f. The terraced area shall not count towards a setback or open space whereas the steep slope, left undisturbed, may count toward the required open space. *(Ord. No.* 2010-10, §3, 5-25-2010)
    g. A creative alternative to Section C (1), (2) and (3) may be approved by the Planning and Zoning Commission if the intent of this section is met.

2. Nonresidential Development

    a. If there exists on a non-residential site a slope with a grade of 20% or greater, no more than 15% of the steep slope area may be disturbed.
    b. If disturbance is necessary for site development, it shall be achieved by terracing as outlined in item (3) below.

3. Residential Development

a. Any residential development which has slope of 15% or greater shall limit the steep slope disturbance as follows:

   i. If the slope grade is 15% - 25%, then 35% of the steep slope area may be disturbed using terraces.
   ii. If the slope grade is 25% or greater, then 15% of the steep slope area may be disturbed using terraces.